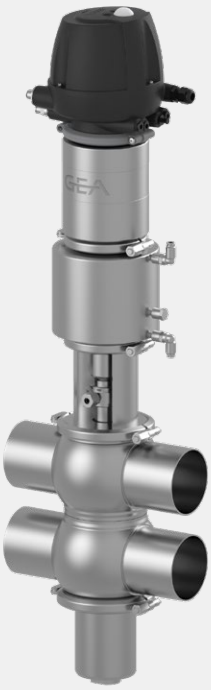
Engineering for a better world.

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GEA VARIVENT® HYGIENIC SEAT VALVES









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GEA VARIVENT®
Hygienic
seat valves



GEA
Hygienic
butterfly valves



GEA VARIVENT®
Valves with hydraulic
actuation technology



GEA VARICOMP®
Hygienic expansion
compensators



GEA VARITOP®
Hygienic tank
safety systems



GEA VARIVENT®
Hygienic special
application valves



GEA VARINLINE®
Hygienic process
connections



GEA VARICOVER®
Hygienic product
recovery systems

Hygienic Valve Technology

Efficiency delivering perfect results
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 costeffective for their particular applications, leading to sustainable operation and considerable savings potential.

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 (milk, yogurt, cheese ...) to liquid foods (sauces and pastes, instant products, baby food ...) 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 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 Department we regularly launch new, technologically mature products on the markets. Our customers have high standards, which we continuously and systematically meet.

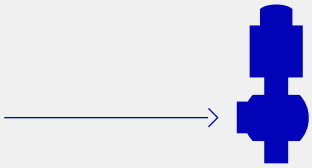


Valves – Setting the Course of the Process



Shut-off valves
Single-seat valves are used for simple shut-off in hygienic applications.

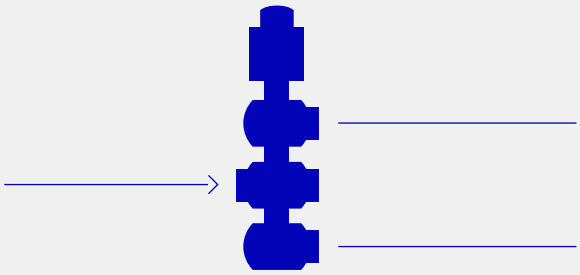
The valves are characterized by their ease of operation and flexibility. To avoid pressure surges, separate types are designed for different flow directions.



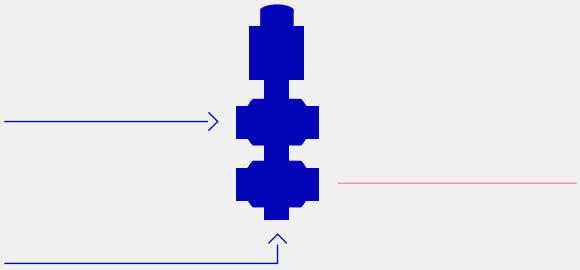


Divert valves
Divert valves direct a liquid medium into the right path.

We offer different types: Valves for the distribution of a liquid from one pipe into two pipes as well as valves for the merging of liquids from two pipes into one pipe in blending processes. To avoid pressure surges, separate types are designed for different flow directions.



Divert valve to distribute products

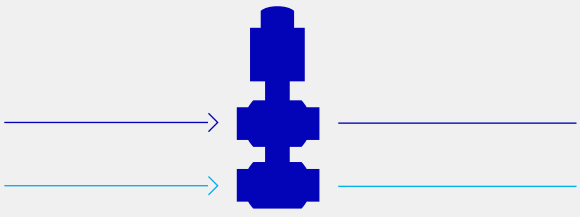


Divert valve to merge products



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

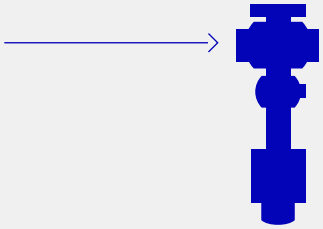
Developed by Otto Tuchenhagen, the founder of GEA's hygienic valve technology range, mixproof valves to this day deliver crucial benefits for safe and secure applications, e.g. in the case of cleaning agents in pipes carrying products. Divert valves are also available as mixproof valves and support the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



Hygienic Classes for Valves

Increasing variety of products, longer production cycles and changing market conditions are all factors that make the conception of new installations more complex for producers. Additionally, there are higher expectations from the consumers as well as stricter regulations for producers and products. Therefore, engineers have many things to consider when creating suitable solutions for their customers. Our goal is to equip your installation with components that fit your product and your market. To better assist you, we have set up a guideline for choosing the right hygienic component technology according to the Association of German Food Processing Machinery and Packaging Machinery (VDMA).

The hygienic classes can be described by microbiological, physicochemical as well as the resulting organoleptic properties of the product. An important indicator for the classification is its desired shelf-life. The classification is based on the desired characteristics of the final product. Contamination risks and the ability to detect them are important factors for corresponding component designs.



Soft drink (still)*
MSL: several months
pH-value: > 4.5



Ice tea (still)*
MSL: > 12 months
pH-value: > 4.5



Babyfood / Nutrition*
MSL: several months
pH-value: > 4.5



UHT milk / UHT cream*
MSL: > 3 months
pH-value: > 4.5



Fruite juice*
MSL: several months
pH-value: ≤ 4.5



Ice tea (still)*
MSL: > 6 months
pH-value: ≤ 4.5



Fruit yogurt, heat-treated**
MSL: > 5 weeks
pH-value: ≤ 4.5



ESL milk**
MSL: 21–45 days
pH-value: > 4.5



Wine*
MSL: > 1 year
pH-value: ≤ 4.5



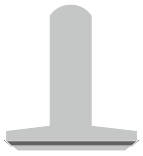
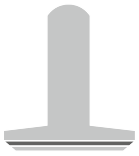
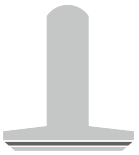
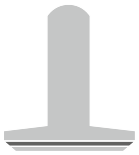
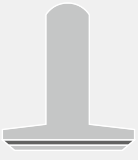
Beer*
MSL: > 6 months
pH-value: ≤ 4.5



Fruit yogurt / Natural yogurt**
MSL: 2–4 weeks
pH-value: ≤ 4.5



Fresh milk**
MSL: 7–10 days
pH-value: > 4.5

	Storage	Preparation	Preservation	Bottling
Aseptic (V)	 Seat valves	 Seat valves	 Stainless steel bellow	 Stainless steel bellow
UltraClean (IV)	 Seat valves	 Seat valves	 Diaphragm and stem diaphragm	 Diaphragm and stem diaphragm
Hygienic (I-III)	 Butterfly valves	 Seat valves	 Seat valves	 Seat valves

* unchilled
** chilled
MSL: Minimum Shelf Life

THE BENCHMARK.

GEA VARIVENT® Valve Unit



GEA VARIVENT® Valves

The standard for hygienic valve technology
Wherever future-proof product and process security is essential in liquid processes, the modular GEA VARIVENT® valve system is first choice for systems operators and engineers. Uncompromisingly hygienic valve technology, adaptable to any requirement, permits sustainably economic system and process solutions for a wide variety of the most demanding production tasks.

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, dead-zone-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 material options meet all hygienic, 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.

Perfectly in tune: The GEA VARIVENT® valve unit
Pioneering mechanical valve technology and equally advanced options for electronic valve control and system communication combine to form a finely tuned valve unit, increasing valve functionality and safety as well as its cost-efficiency in operation.

Made in Germany – renowned worldwide
The invention of the mixproof valve by Otto Tuchenhagen in Büchen, Germany in 1967 set in motion the triumphant march of the modular VARIVENT® valve series shortly thereafter. To this day, GEA develops and manufactures every GEA VARIVENT® valve unit at the original Büchen site in Germany. The experience of GEA's engineers along with the huge installed base of valve units around the world offer the best guarantee of safety and total reliability. Users benefit continuously from international project developments and ground-breaking innovations which are incorporated into the valve design.

Every GEA VARIVENT® valve unit keeps the promise of "The Benchmark" – the bar for hygienic valve technology.

The Sustainable Choice – 4 is the new 6

10 % savings potential on compressor energy costs and reduction of carbon footprint with 4 bar valve actuators
GEA VARIVENT® hygienic process valves are actuated by compressed air in automated systems, connected to the air supply stations via the digital valve control top. In a pioneering effort, GEA has introduced specially designed 4-bar actuators for all relevant valve types and process applications. This allows operators to reduce the compressed air system pressure, resulting in significant energy savings throughout the plant.

Pioneered by GEA to enable pressure-reduced control air systems
Compressed air is essential for operating automated valve systems and other process equipment. But it comes at a significant cost – typically 10 % – 15 % of the total energy consumption in food and beverage plants. Due to the increasing need to save energy, experts now recommend reducing the air system pressure. Historically, 6 bar has been the standard system pressure in many industries, and available valve actuators are mostly still designed for 6 bar, inhibiting plants from implementing lower pressures.

GEA is leading the way to a more sustainable setup, with 4-bar actuators made available for all GEA VARIVENT® seat valves (single-seat and mixproof) and GEA Hygienic butterfly valves. These 4-bar actuators maintain full reliability of functionality and operation. They can be ordered for retrofit or new valve installations.

Awarded the Add Better label
As one of numerous new resource-efficient solutions by GEA, the energy-saving 4-bar valve actuators carry the Add Better label.



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.

GEA VARIVENT® single seat valve





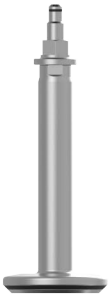
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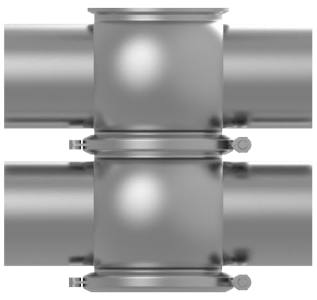
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4



5



6

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.

GEA VARIVENT® mixproof valve



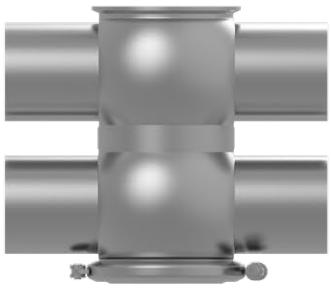












3 Lifting actuator
Mixproof valves are optionally equipped with a lifting actuator, which enables individual lifting of a single valve disc when cleaning the respective pipe. This allows cleaning of the sealing surfaces in the seat area.

4 Lantern
The open lantern separates the actuator and product parts. 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. The VARIVENT® valve series enables the integration of additional valve options in the lantern, 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. Mix-proof separation of the media is achieved by two mutually independent valve discs, 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 inside 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. Depending on the valve design, different seat rings are installed between the valve housings. Optionally, numerous housing combinations are available with either clamped or welded seats.

Hygienic Valves Technical Characteristics

VARIVENT® and ECOVENT® hygienic valves offer reliable function, are suitable for CIP/SIP, easy to maintain and represent a significant factor in consistent product quality. Low operating, maintenance and service costs ensure economical system productivity.

The VARIVENT® system has a modular structure, which means it offers a high level of flexibility. The result is economic efficiency for the system operator, optimized stock keeping and low-cost spare parts production due to the reduced diversity of parts.

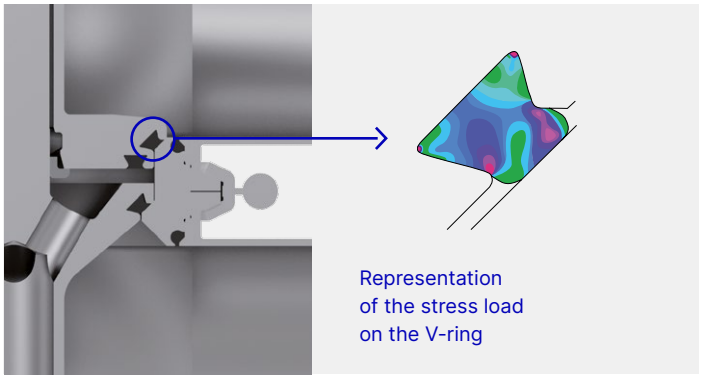
The ECOVENT® valve series is characterized by its compact design. Contrary to the VARIVENT® systems with multiple options, this series provides a simple and efficient solution for standard requirements.

Modular system
Greater flexibility thanks to the ability to adapt rapidly to process changes
High economic efficiency
Low spare part stocks

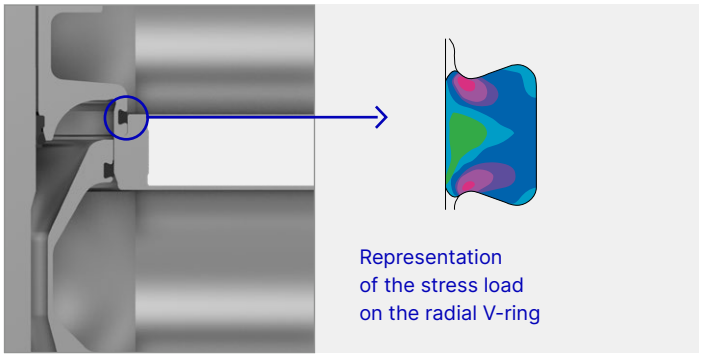
Hygienic design
Lower risk of contaminating the end product
Maximum efficiency in cleaning
Lower CIP costs

Sealing according to the VARIVENT® principle

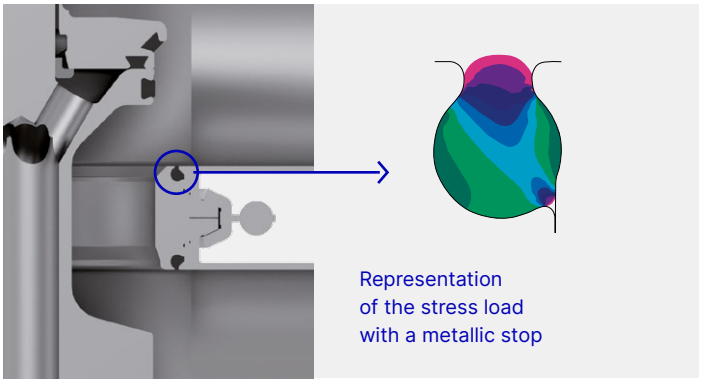
The hygienic valves are characterized by special seal technology. A metallic stop results in defined seal deformation, ensuring long seal life. This allows for more time to pass between required maintenance services with the process system, thereby allowing for continuous production and shorter downtimes. The special groove shape in the valve disc makes sure the seal has a secure hold at all times up to a pressure differential of 10 bar during switching. The seal geometry was optimized using FEM calculations.



Representation of the stress load on the V-ring



Representation of the stress load on the radial V-ring



Representation of the stress load with a metallic stop

Seals
Long operating time
Vacuum-proof
Selection of FDA-compliant seal materials • EPDM • FKM • HNBR • TEFASEP® gold

Available nominal widths for valve series

Nominal width	DN	10	15	25	40	50	65	80	100	125	150				
	OD			1"	1 ½"	2"	2 ½"	3"	4"		6"				
	IPS											2"	3"	4"	6"
Valve type															
VARIVENT®															
Shut-off valve type N				•	•	•	•	•	•	•	•	•	•	•	•
Long-stroke shut-off valve type N_V							•	•	•						
Shut-off valve type U				•	•	•	•	•	•	•	•	•	•	•	•
Shut-off valve radial sealing type U_R				•	•	•	•	•	•	•	•				
Long-stroke shut-off valve type U_V								•	•						
Divert valve type W				•	•	•	•	•	•	•	•	•	•	•	•
Divert valve radial sealing type W_R				•	•	•	•	•	•						
Long-stroke divert valve type W_V							•	•	•						
Divert valve type X				•	•	•	•	•	•	•	•	•	•	•	•
Divert valve radial sealing type X_R				•	•	•	•	•	•	•	•				
Long-stroke divert valve type X_V*							•	•	•						
Double-seat valve type D				•	•	•	•	•	•	•	•	•	•	•	•
Double-seat long-stroke valve type D_/ V*								•	•						
Double-seat valve type D_L, D_C				•	•	•	•	•	•	•	•	•	•	•	•
Double-seat long-stroke valve type D_L / V, D_L / C*								•	•						
Double-seat valve type B							•	•	•	•	•	•	•	•	•
Double-seat valve type B_L, B_C							•	•	•	•	•	•	•	•	•
Double-seat valve type R				•	•	•	•	•	•	•	•	•	•	•	•
Double-seat valve type R_L, R_C												•	•	•	•
Double-seat valve type MX				•	•	•	•	•	•	•	•				
24/7 PMO Double-seat valve type M_O/2.0*				•	•	•	•	•	•		•				
24/7 PMO Double-seat cheese curd valve type M_C/2.0*									•		•				
24/7 PMO valve type M_S/2.0 with divisible actuator*					•	•	•	•	•	•	•				
Double-seat valve type L_H					•	•	•	•	•						
Double-seat valve type L_HL, L_HC					•	•	•	•	•						
Double-seat valve type L_S					•	•	•	•	•						
Double-seat valve type L_SL L_SC					•	•	•	•	•						
Double-seat divert valve type Y				•	•	•	•	•	•	•	•	•	•	•	•
Double-seat divert valve type Y_L, Y_C				•	•	•	•	•	•	•	•	•	•	•	•
Flow diversion device (FDD) type X_R*				•	•	•	•	•	•						
Double-seal valve type C				•	•	•	•	•	•	•	•				
Double-seat valve type K				•	•	•	•	•	•	•	•	•	•	•	•
Bottom valve type N				•	•	•	•	•	•	•	•	•	•	•	•
Long-stroke bottom valve type N_V							•	•	•						
Bottom valve type U				•	•	•	•	•	•	•	•	•	•	•	•
Bottom valve type U_R				•	•	•	•	•	•	•	•				
Long-stroke bottom valve type U_V								•	•						
Double-seat bottom valve type T_R					•	•	•	•	•	•	•	•	•	•	•
Double-seat bottom valve type T_RL, T_RC				•	•	•	•	•	•	•	•	•	•	•	•
24/7 PMO Double-seat bottom valve type MT*						•	•	•	•		•				
24/7 PMO Double-seat bottom valve type MT with divisible actuator*							•	•	•	•	•				
ECOVENT®															
Shut-off valve type N_/ECO				•	•	•	•	•	•						
Shut-off valve type N_/ECO DN 10, DN 15		•	•												
Angle valve type NIV/ECO*							•	•	•						
Divert valve type W_/ECO				•	•	•	•	•	•						
Divert valve type W_/ECO DN 10, DN 15		•	•												
Bottom valve type N_/ECO				•	•	•	•	•	•						

* Only nominal width OD

Hygienic Valves Technical Characteristics

Pipe classes

Standard VARIVENT® valve housings are supplied with welding ends, although the valves can be delivered with various connection fittings as an option (see section 8).

The dimensions of the welding ends comply with the following standards:

Metric		Inch		
DIN	Outside diameter according to DIN 11866, series A	OD IPS	Outside diameter based on ASME-BPE-a-2004, DIN 11866, series C	Outside diameter according to IPS schedule 5
10	13.0 × 1.50			
15	19.0 × 1.50			
25	29.0 × 1.50	1"	25.4 × 1.65	
40	41.0 × 1.50	1 ½"	38.1 × 1.65	
50	53.0 × 1.50	2"	50.8 × 1.65	60.3 × 2.00
65	70.0 × 2.00	2 ½"	63.5 × 1.65	
80	85.0 × 2.00	3"	76.2 × 1.65	88.9 × 2.30
100	104.0 × 2.00	4"	101.6 × 2.11	114.3 × 2.30
125	129.0 × 2.00			
150	154.0 × 2.00	6"	152.4 × 2.77	168.3 × 2.77

Surfaces

The standard roughness for surfaces in contact with the product is $R_a \leq 0.8$ µm.

Higher-quality surfaces are an available option (see section 8).

Housing surfaces not in contact with the product as well as the lanterns are matt blasted as standard. Alternatively the housings are available with a ground outer surface.

The lanterns of the VARIVENT® Mixproof Valves type MX and the ECOVENT® valves have a bright surface. All actuators of the VARIVENT® and ECOVENT® valves also have a bright surface.

Materials

Components in contact with the product are produced from 1.4404 (AISI 316L), while those not in contact with the product are made from 1.4301 (AISI 304). Other materials, e.g. for use when handling aggressive fluids, are available on request.

For detailed information about the properties of the materials, refer to the material properties table.

Test report and inspection certificate

Optionally, the valve housings and internal components can be supplied with a test report 2.2 or an inspection certificate 3.1 acc. to EN 10204.

If 3.1 inspection certificates are required, please notify us of this when you place the order.

Seal materials

Seals in contact with the product are EPDM (standard), FKM as well as HNBR and TEFASEP® gold (on request; not available for all valve types). NBR material is used for seals not in contact with the product. Other materials for seals in contact with the product are available on request. EPDM will be supplied if no seal material is specified in the orders.

The mixing constituents of our seal materials EPDM and FKM are contained in the FDA White List. In this the sealings are in accordance with FOOD and DRUG (FDA) guidelines 21 CFR Part 177.2600 or 21 CFR 177.1550: “Rubber articles intended for repeated use”.

The resistance of the seal material depends on the nature and temperature of the product being transported. The contact time with certain products can negatively affect the service life of seals.

For detailed information about the properties of the seal materials, refer to the seal material properties table.

Material properties

						Main alloy elements in % by mass			
Material number	Short name			Similar materials	PREN***	Cr (Chrome)	Ni (Nickel)	Mo (Molybdenum)	C max. (Carbon)
1.4301*	X5CrNi18-10	AISI 304	BS 304S15	SS2332	18	17.5 – 19.5	8.0 – 10.5	–	0.07
1.4404**	X2 CrNiMo 17-12-2	AISI 316L	BS 316S11	SS2348	25	16.5 – 18.5	10.0 – 13.0	2.0 – 2.5	0.03
1.4435	X2 CrNiMo 18-14-3	AISI 316L	BS 316S11	SS2353	27	17.0 – 19.0	12.5 – 15.0	2.5 – 3.0	0.03
1.4462	X2 CrNiMoN 22-5-3	2205	BS 318S13	SS2377	37	21.0 – 23.0	4.5 – 6.5	2.5 – 3.5	0.03
1.4410	X2 CrNiMoN 25-7-4	SAF 2507®	–	SS2328	39	24.0 – 26.0	6.0 – 8.0	3.0 – 4.5	0.03
1.4529	X1 NiCrMoCuN 25-20-7	AISI 926	–	–	42	19.0 – 21.0	24.0 – 26.0	6.0 – 7.0	0.02
AL-6XN®	–	–	–	–	43	20.0 – 22.0	23.5 – 25.5	6.0 – 7.0	0.03
1.4539	X1 NiCrMoCu 25-20-5	AISI 904L	BS 904S13	SS2562	35	19.0 – 21.0	24.0 – 26.0	4.0 – 5.0	0.02
2.4602	NiCr21Mo14W HASTELLOY C-22	–	–	–	69	20.0 – 22.5	Rest	12.5 – 14.5	0.01
2.4819	NiMo16Cr15W HASTELLOY C-276	N 10276	–	–	75	14.5 – 16.5	Rest	15.0 – 17.0	0.01

* Standard material for components not in contact with the product

** Standard material for components in contact with the product (other materials available on request)

*** Pitting Resistance Equivalent Number = % Cr + 3.3 × (% Mo + 0.5 W) + 20 N

Seal material properties

Seal material			EPDM	FKM	HNBR	FFKM	Tefasep® Gold
General application temperature*			−40 to 135 °C −40 to 275 °F	−10 to 200 °C 14 to 392 °F	−25 to 140 °C −13 to 284 °F	−10 to 230 °C 14 to 446 °F	−80 to 200 °C −112 to 392 °F
Medium	Concentration	At permitted operating temperature					
Alkali	≤ 3 %	up to 80 °C	+	o	+	+	+
	≤ 5 %	up to 40 °C	+	o	o	+	+
	≤ 5 %	up to 80 °C	+	–	–	+	+
	> 5 %		o	–	–	+	+
Inorganic acid**	≤ 3 %	up to 80 °C	+	+	+	+	+
	≤ 5 %	up to 80 °C	o	+	o	+	+
	> 5 %	up to 100 °C	–	+	–	+	+
Water		up to 100 °C	+	+	+	+	+
Steam		up to 135 °C	+	o	o	–	+
Steam, approx. 30 min		up to 150 °C	+	o	–	–	+
		up to 160 °C	–	–	–	–	+
Hydrocarbons / fuels			–	+	o	+	+
Products containing grease	≤ 35 %		+	+	+	+	+
	> 35 %		–	+	+	+	+
Oils			–	+	+	+	+

Other applications on request

* The general resistance of the material does not correspond to the maximum possible operating temperature.

** Inorganic acids are, for example, hydrochloric acid, nitric acid, sulphuric acid

\+ = Good resistance

O = Reduced service life

– = Not resistant

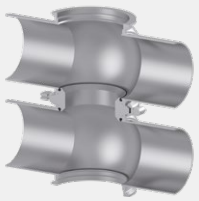
Hygienic Valves Technical Characteristics

Housing connections

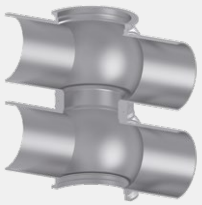
Two alternative housing connections are available: the clamped connection (standard) and the fixed housing connection. The clamped housing selection permits a flexible choice of port orientation.

The advantage of the welded housing connection is that no seals at the seat ring are needed. As a result, the service work during maintenance of the valves is reduced.

Also mix-matched housing combinations (see section 8) are available on request – both with clamped and fixed housing connection, depending on the valve type.



Clamped housing connection: Seat ring clamped by clamping connection



Fixed housing connection: Housing and seat ring welded (welding housing)

Installation

VARIVENT® and ECOVENT® valves must be installed without stresses. Lateral forces such as expansion of the pipelines due to heat cannot be compensated in the valve, as a result valve damages are possible. In such cases, we recommend taking measures to compensate for the expansion, such as by using the VARICOMP® expansion compensator.

The required clearance for installing and removing a VARIVENT® or ECOVENT® valve is specified in the particular technical data and dimensional sheet.

Recommended flow direction

If possible, the valves should close against the flow direction in order to avoid water hammer.

Ambient conditions

Ambient temperatures	
VARIVENT® / ECOVENT® (with connection 0)	0 °C to 45 °C 32 °F to 113 °F

The valves can also be used outdoors. However, in these application areas they must be protected against icing, or else de-iced before switching or lifting. In addition, the particular requirements on the control and feedback system must be taken into account in this case.

The product or operating temperature depends on the seal material and can be seen in the seal material properties table.

Air supply

The valve actuators are configured for operation with min. 4 bar and max. 8 bar air pressure. The standard actuator sizes are configured for an air supply pressure of min. 6 bar (with a product pressure of 5 bar). The quality of the air supply must meet the requirements of ISO 8573-1:2010.

ISO 8573-1:2010	
Solid content	Quality class 6
	Particle size max. 5 µm
	Particle density max. 5 mg/m³
Water content	Quality class 4
	Max. dew point 3 °C
	A correspondingly different dew point is required for applications at high altitude or with low ambient temperatures.
Oil content	Quality class 3
	Max. 1 mg oil per 1 m³ air, preferably oil-free

Operating pressure
The valves can be operated down to a negative pressure of –0.95 bar. As standard, the valves are configured for a product pressure up to max. 5 bar (all-round). The maximum product pressure for which the hygienic valves can be configured is 10 bar. Upon request, individual valve types can be supplied with the nominal pressure level of PS20. It should be noted in this case, however, that when switching the valve, the pressure differential between the upper and lower housing is only allowed to be 10 bar.

Actuator types
The modular structure of VARIVENT® valves makes it possible to equip them with different actuator types. As standard, the valves are supplied with a pneumatic actuator with spring return.

The pneumatic actuators are configured for long-term operation, and are maintenance-free. Optionally, additional actuator types are available (see section 8).

Feedback
In the control top
See catalog GEA Valve Automation

In the lantern (LAT)
Proximity switches of size M12×1 can detect the positions “open” and/or “closed”. In double-seat valves with lift actuator, it is also possible to detect the upper valve disc stroke in the lantern by means of a proximity switch (see catalog GEA Valve Automation).

For detecting the end positions by proximity switches in these valves, it is recommended to use the proximity switch holder (INA) on the actuator (see catalog GEA Valve Automation).

Certificates
Hygienic valves in the GEA VARIVENT® family, including ECOVENT® variants, have been designed according to the requirements of the European Hygienic Engineering and Design Group (EHEDG) as well as 3-A Sanitary Standards, Inc. (3-A SSI).

Certificates are available for several valve types. Additionally, numerous valves have been demonstrated to offer trouble-free and efficient cleaning ability not only in accordance with the above guidelines, but also in independent and standardized cleaning tests. The GEA VARIVENT® product family hence offers optimal safety and high potential savings.

ATEX certificates, CRN, EAC and other additional certificates are available on request for many GEA VARIVENT® valves and for other hygienic valves and components in the GEA portfolio.

GEA VARIVENT® and ECOVENT® valves comply with the EC Machinery Directive 2006/42/EC and bear the CE mark. They also fulfill the EN ISO 12100:2010 standard for the safety of machinery.

Due to their refined design, the GEA VARIVENT® family, including ECOVENT® variants, also meet the essential health and safety requirements of the EC Pressure Equipment Directive 2014/68/EU.

GEA VARIVENT® and ECOVENT® valves can come into contact with food. Components with the sealing material EPDM or FKM comply with Regulation (EC) No. 1935/2004 of the European Parliament and Council.

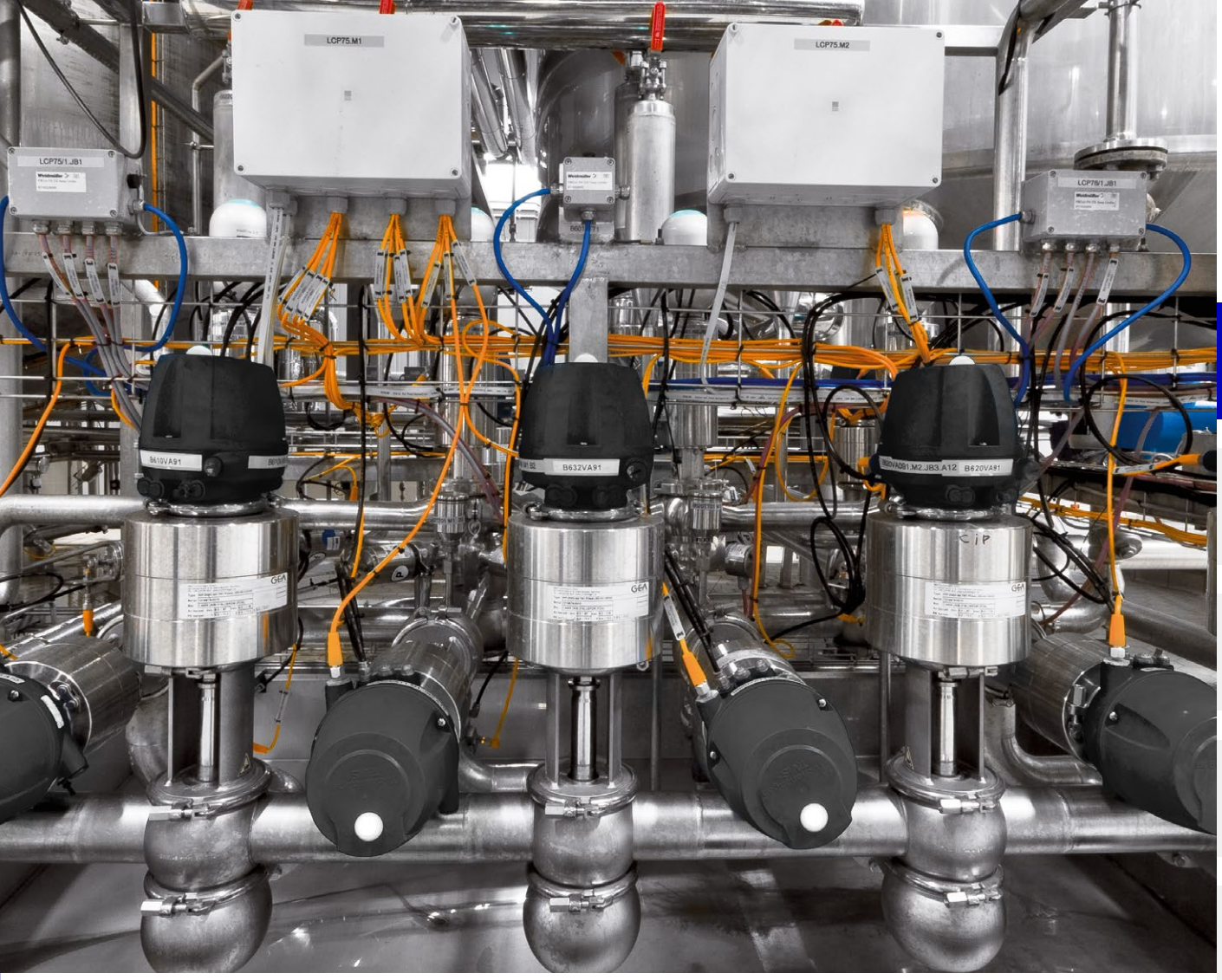
Selection Matrix

Catalogs Hygienic Valve Technology	**GEA VARIVENT®** **seat valves**
Catalogs Hygienic Pump Technology	GEA Butterfly valves
Catalogs Aseptic Valve Technology	GEA VARIVENT® special application valves
Catalogs Cleaning Technology	GEA VARITOP® tank safety systems
	GEA VARINLINE® / GEA VARICOMP® process connections and expansion compensators
	GEA VARICOVER® product recovery systems
	GEA Valve automation control and feedback systems
	GEA Hydract® Technology


Single-seat valves
Shut-off valves
1
Divert valves
2
Mixproof seat valves for product applications
Mixproof shut-off valves for product applications
3
Piggable mixproof shut-off valves
4
Mixproof divert valves
5
Mixproof seat valves for CIP and gas applications
Mixproof shut-off valves for CIP and gas applications
6
Tank bottom valves
Single-seat and mixproof tank bottom valves
7
Options
8

1 SHUT-OFF VALVES

VARIVENT® Hygienic Seat Valves



Overview of Single-seat Valves

Single-seat shut-off valves

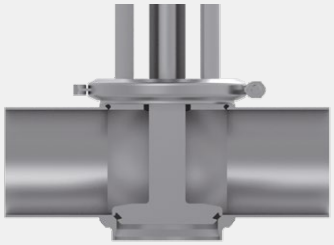
VARIVENT® and ECOVENT® single-seat valves are used for simple shut-off in hygienic applications. The valves are characterized by their ease of operation and flexibility. To avoid water hammers, individual variants in the VARIVENT® modular system are configured for different flow directions.

Special features
Certified, hygienic configuration
Metallic stop
Flexibility because of the modular principle
Proven seal geometry
Availability of two valve series



Overview of Single-seat Valves

Function of the valve
In the simple shut-off, there is only one seal in the one-piece valve disc separating the pipelines from one another. This means liquid can pass from one pipeline to the other in the eventuality of a seal defect. For this reason, single-seat shut-off valves are not suitable for separating incompatible products.



Simple shut-off
with only one seal

Application examples
In practical use, these valves are used, for example, as emptying / drainage valves or for shutting off a bypass line. Frequently, these types of valve are also used as dosing valves.

The small ECOVENT® valve type N/ECO in nominal widths DN 10 or DN 15 is predominantly used as a feed valve for supplying the spray cleaning of double-seat valves.

The ECOVENT® Angle Valve type NIV/ECO implements a flow through the entire nominal width of the pipe. Due to its special design, a horizontal installation orientation of the housing and an upright valve position is absolutely required.

VARIVENT®

The structure of the VARIVENT® modular system has many optional versions available to best optimize the valve in the process. Please refer to the options section (section 7) for information about these.

VARIVENT® long-stroke valves are used for transporting fluids with relatively large particles or for viscous products, such as yoghurt with pieces of fruit.



Sizes

Single-seat shut-off valves	Long-stroke shut-off valves
DN 25 – DN 150	DN 65 – DN 100
OD 1" – OD 6"	OD 2 ½" – OD 4"
IPS 2" – IPS 6"	

ECOVENT®

The ECOVENT® valve series is characterized by its compact design. Contrary to the VARIVENT® systems with multiple options, this series provides a simple and economical solution for standard requirements.



Sizes

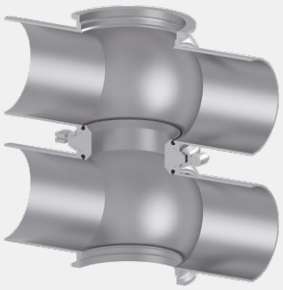
Single-seat shut-off valves	ECOVENT® Angle valve type NIV/ECO
DN 10 – DN 100	OD 2½" – OD 4"
OD 1" – OD 4"	

Overview of Single-seat Valves

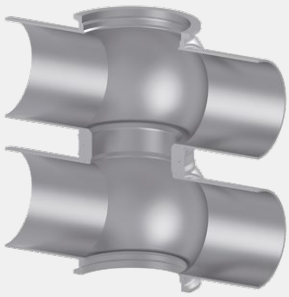
Housing combinations
VARIVENT® and ECOVENT® single-seat shut-off valves are available with an extremely wide range of housing combinations. In addition, it is possible to select between a clamped and a welded housing connection.

Valve seat version
The clamped housing connection is characterized by a high level of flexibility when it comes to installing the valve. The port orientation of the single-seat shut-off valve can thus be adapted to the pipeline system in question.

The advantage of the welded valve seat version lies in its low maintenance requirements, because there are no O-rings between the housings.

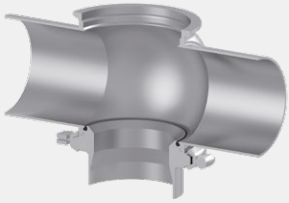


Clamped housing connection:
Seat ring clamped by clamping connection

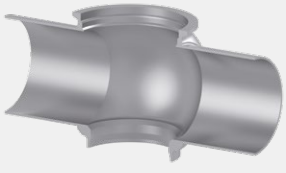


Welded housing combination:
Housing and seat ring welded (welded housing)

In VARIVENT® and ECOVENT® valve types N, both clamped vertical ports (L0) and a one-piece housing (V0) are available for the housing combinations L and T.



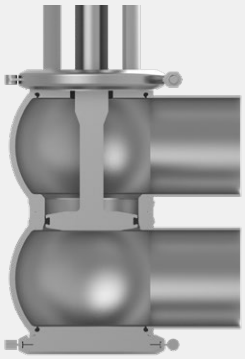
L0-housing



V0-housing

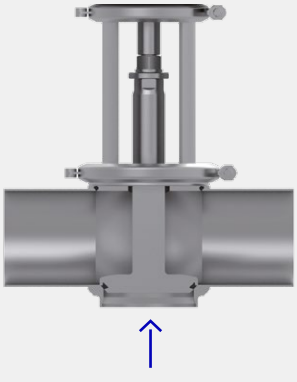
Maintenance
To ensure being able to service the valve insert when servicing a type U shut-off valve insert, the valve disc must be removed from the pipework through the lower housing or together with the upper housing. For this reason, it is recommended to provide a detachable connection, e.g. a VARIVENT® flange connection, on the relevant housings concerned or in the connected pipework system.

The radial sealing shut-off valve type U_R was developed to offer the advantage of a welded valve seat design. This design is characterised by low maintenance requirements. The valve disc with its radial seal can simply be removed upwards through the seat ring. Furthermore, there is no need to replace O-rings in the valve seat.

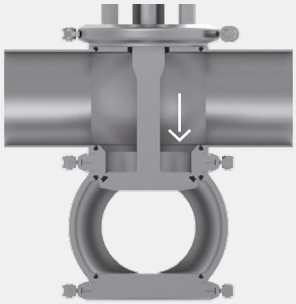


Valve type U_R

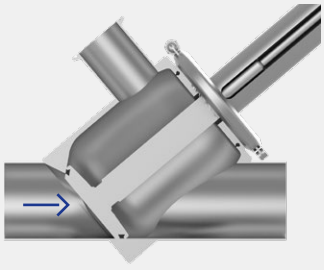
Recommended flow direction
To avoid water hammers when closing the valve while the product is flowing, single-seat shut-off valves should be switched against the flow direction of the product. Valve type N is designed for a flow from the lower to the upper pipeline, whereas valve type U is for the opposite flow direction. Valve type U is only available in the VARIVENT® series, thus making clear one of the major differences between VARIVENT® and ECOVENT®: the difference in the number of variants available in both series. To avoid water hammers when closing the valve while the product is flowing, ECOVENT® angele valves should be switched against the flow direction of the product.



Valve type N
(Spring-to-close, NC)



Valve type U
(Spring-to-close, NC)



ECOVENT® Angle valve in the closed switching position

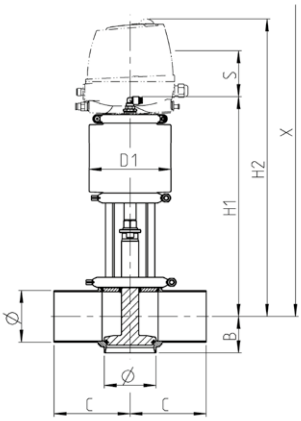
Selection Matrix

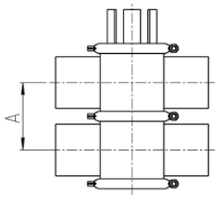


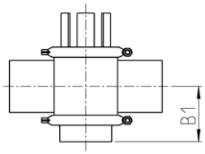

Modular system
VARIVENT® single-seat valve type N
1
Compact design
ECOVENT® single-seat valve type N / ECO
2
Nominal width DN 10 or DN 15
ECOVENT® single-seat valve type N / ECO
3
Viscous product or product withlarge particles
VARIVENT® single-seat long-stroke valve type N_V
4
Modular system
VARIVENT® single-seat valve type U
5
Optimized maintenance with radial sealing
VARIVENT® radial sealing single-seat valve type U_R
6
Viscous product or product with large particles
VARIVENT® single-seat long-stroke valve type U_V
7
Flow of the entire pipe cross-section
ECOVENT® angle valve type NIV/ECO
8

VARIVENT® Type N
Single-seat Valve

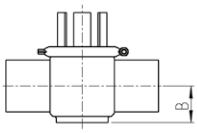








Loose seat ring



Fixed vertical port

Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped or welded seat ring
Marking / Certificates	CE, EHEDG, FDA

	Pipe				Housing	Actuator	Dimensions			Valve
Nominal width	Ø [mm]	A [mm]	B [mm]	B1 [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	50.0	31	58.0	90.0	99	294	423	508	16	6
DN 40	41.0 × 1.50	62.0	39	64.0	90.0	110	335	464	549	18	8
DN 50	53.0 × 1.50	74.0	41	70.0	90.0	110	341	470	555	30	8
DN 65	70.0 × 2.00	96.0	52	83.0	125.0	135	352	481	626	30	13
DN 80	85.0 × 2.00	111.0	60	90.5	125.0	135	360	489	634	30	13
DN 100	104.0 × 2.00	130.0	70	100.0	125.0	170	399	528	673	30	19
DN 125	129.0 × 2.00	155.0	113	112.0	150.0	260	555	684	884	60	46
DN 150	154.0 × 2.00	180.0	125	125.0	150.0	260	579	708	908	60	51
OD 1"	25.4 × 1.65	46.0	29	56.0	90.0	99	292	421	506	12	6
OD 1 ½"	38.1 × 1.65	59.0	39	62.5	90.0	110	337	466	551	18	8
OD 2"	50.8 × 1.65	71.5	42	68.0	90.0	110	343	472	557	30	8
OD 2 ½"	63.5 × 1.65	90.0	54	80.0	125.0	135	356	485	630	31	13
OD 3"	76.2 × 1.65	103.0	54	86.5	125.0	135	363	492	637	29	13
OD 4"	101.6 × 2.11	127.5	69	99.0	125.0	170	401	530	675	30	20
OD 6"	152.4 × 2.77	177.0	124	123.0	150.0	260	578	707	907	57	51
IPS 2"	60.3 × 2.00	81.0	44	73.5	114.3	110	338	467	552	30	8
IPS 3"	88.9 × 2.30	115.0	63	92.5	152.5	135	358	487	632	30	13
IPS 4"	114.3 × 2.30	140.0	75	105.0	152.5	170	394	523	668	30	20
IPS 6"	168.3 × 2.77	192.0	131	131.0	152.5	260	573	702	902	60	51

Position	Description of the order code for the standard version						
1	**Valve type**						
	N	VARIVENT® single-seat valve					
2	**Housing combinations**						
	A	B	C	E	L	T	
							
3	**Supplement to the valve type**						
	Reserved for options						
4/5	**Nominal width (upper housing/lower housing)**						
	DN 25	OD 1"					
	DN 40	OD 1 ½"					
	DN 50	OD 2"	IPS 2"				
	DN 65	OD 2 ½"					
	DN 80	OD 3"	IPS 3"				
	DN 100	OD 4"	IPS 4"				
	DN 125						
	DN 150	OD 6"	IPS 6"				
6	**Actuator type**						
	S	Air / Spring					
7	**Non-actuated position**						
	Z	Spring-to-close (NC)					
	A	Spring-to-open (NO)					
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**						
	Actuator (spring-to-close)		Actuator (spring-to-open)		For nominal widths		
	AA		AA		DN 25, OD 1"		
	BB		BA		DN 40, DN 50, OD 1 ½", OD 2", IPS 2"		
	CD		CB		DN 65, DN 80, OD 2 ½", OD 3", IPS 3"		
	DF		DD		DN 100, OD 4", IPS 4"		
	SH6		EF6		DN 125		
	SK6		SG6		DN 150, OD 6", IPS 6"		
9	**Valve seat version***		Housing combination				
			A	B	C	E	L	T
	L0	Loose seat ring / Clamp connection	•	•	•	•	•	•
	V0	Welded seat ring / Port orientation 0° or fixed vertical port	•	•	•	•	•	•
	V1	Welded seat ring / Port orientation 90°	•	•	•	•		
	V2	Welded seat ring / Port orientation 180°		•				
	V3	Welded seat ring / Port orientation 270°		•				
10	**Seal material in contact with the product**						
	1	EPDM (FDA)					
	2	FKM (FDA)					
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")					
11	**Surface quality of the housing**						
	2	Inside $R_a \leq 0.8$ µm, outside matt blasted					
12	**Connection fittings**						
	N	Welding end					
13	**Accessories**						
	/52	Adhesive ID tag					
+							
14–19	**Air connection / Control and feedback system**						
	00000M	Metric for air hose Ø 6/4 mm					
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)					
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation					

* For more information see page 192

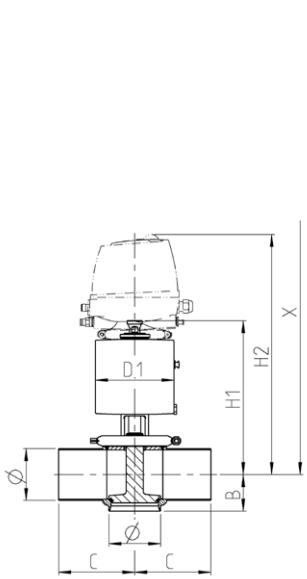
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	N			-	/	-	S		-		-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

ECOVENT® Type N/ECO
Single-seat Valve





Loose seat ring

Fixed vertical port

Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	$R_a \leq 0.8$ µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped or welded seat ring
Marking / Certificates	CE FDA

	Pipe				Housing	Actuator	Dimensions				Valve
Nominal width	Ø [mm]	A [mm]	B [mm]	B1 [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	50.0	31	58.0	90	85	209	338	423	16.0	5
DN 40	41.0 × 1.50	62.0	39	64.0	90	104	243	372	457	20.0	7
DN 50	53.0 × 1.50	74.0	41	70.0	90	104	249	378	463	28.0	7
DN 65	70.0 × 2.00	96.0	52	83.0	125	129	257	386	531	28.0	11
DN 80	85.0 × 2.00	111.0	60	90.5	125	129	264	393	538	28.0	11
DN 100	104.0 × 2.00	130.0	70	100.0	125	170	274	403	548	28.0	16
OD 1"	25.4 × 1.65	46.0	29	56.0	90	85	207	336	421	12.0	5
OD 1 ½"	38.1 × 1.65	59.0	39	62.5	90	104	241	370	455	17.0	7
OD 2"	50.8 × 1.65	71.5	42	69.0	90	104	248	377	462	25.5	7
OD 2 ½"	63.5 × 1.65	90.0	54	80.0	125	129	254	383	528	22.0	11
OD 3"	76.2 × 1.65	103.0	54	86.5	125	129	260	389	534	20.0	11
OD 4"	101.6 × 2.11	127.5	69	99.0	125	170	273	402	547	25.5	17

Position	Description of the order code for the standard version												
1	**Valve type**												
	N	ECOVENT® single-seat valve											
2	**Housing combinations**												
	A	B	C	E	L	T							
													
3	**Supplement to the valve type**												
	/ECO												
4/5	**Nominal width (upper housing/lower housing)**												
	DN 25	OD 1"											
	DN 40	OD 1 ½"											
	DN 50	OD 2"	IPS 2"										
	DN 65	OD 2 ½"											
	DN 80	OD 3"	IPS 3"										
	DN 100	OD 4"	IPS 4"										
6	**Actuator type**												
	E	Air / Spring											
7	**Non-actuated position**												
	Z	Spring-to-close (NC)											
	A	Spring-to-open (NO)											
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**												
	Actuator (spring-to-close)		Actuator (spring-to-open)				For nominal widths						
	EAA		EAA				DN 25, OD 1"						
	EBB		EBA				DN 40, DN 50, OD 1 ½", OD 2"						
	ECD		ECB				DN 65, DN 80, OD 2 ½", OD 3"						
	EDF		EDD				DN 100, OD 4"						
9	**Valve seat version**			Housing combination									
				A	B	C	E	L	T				
	L0	Loose seat ring / Clamp connection		•	•	•	•	•	•				
	V0	Welded seat ring / Port orientation 0° or fixed vertical port		•	•	•	•	•	•				
	V1	Welded seat ring / Port orientation 90°		•	•	•	•						
	V2	Welded seat ring / Port orientation 180°			•								
	V3	Welded seat ring / Port orientation 270°			•								
10	**Seal material in contact with the product**												
	1	EPDM (FDA)											
	2	FKM (FDA)											
	3	HNBR (FDA)											
11	**Surface quality of the housing**												
	2	Inside R_a ≤ 0.8 µm, outside matt blasted (DN, OD)											
12	**Connection fittings**												
	N	Welding end											
13	**Accessories**												
	/52	Adhesive ID tag											
+													
14–19	**Air connection / Control and feedback system**												
	00000M	Metric for air hose Ø 6/4 mm											
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)											
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation											

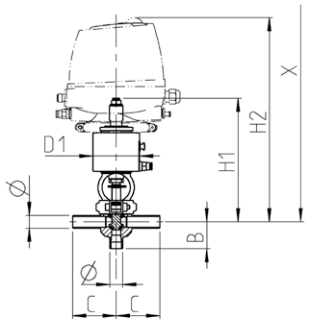
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	N		/ECO	-	/	-	E		-		-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

ECOVENT® Type N/ECO DN 10, DN 15
Single-seat Valve





Technical data of the standard version

Recommended flow direction	Against the closing direction
Material housing	1.4435 (AISI 316L)
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	4–8 bar (58–116 psi)
Product pressure	10 bar (145 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Ground
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Fixed vertical port
Marking / Certificates	CE FDA

	Pipe	Housing	Actuator	Dimensions			Valve	
Nominal width	Ø [mm]	B [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 10	13.0 × 1.50	40	65	70	166	295	345	8.5	4
DN 15	19.0 × 1.50	40	65	70	169	298	348	8.5	4

Position	Description of the order code for the standard version			
1	**Valve type**			
	N	ECOVENT® single-seat valve		
2	**Housing combinations**			
	L 	T 		
3	**Supplement to the valve type**			
	/ECO	ECOVENT®		
	/M/ ECO	ECOVENT® with stainless steel bellow		
4/5	**Nominal width (upper housing/lower housing)**			
	DN 10			
	DN 15			
6	**Actuator type**			
	E	Air / Spring		
7	**Non-actuated position**			
	Z	Spring-to-close (NC)		
	A	Spring-to-open (NO)		
8	**Standard configuration with 4–8 bar air supply pressure for 10 bar product pressure**			
	Actuator (spring-to-close)		Actuator (spring-to-open)	
	60/4		60/4	
9	**Valve seat version**		Housing combination	
			L	T
	V0	Fixed vertical port	•	•
10	**Seal material in contact with the product**			
	1	EPDM (FDA)		
	2	FKM (FDA)		
	3	HNBR (FDA)		
11	**Surface quality of the housing**			
	3	Inside R_a ≤ 0.8 µm, outside ground		
12	**Connection fittings**			
	N	Welding end		
13	**Accessories**			
	/52	Adhesive ID tag		
+				
14–19	**Air connection / Control and feedback system**			
	00000M	Metric for air hose Ø 6/4 mm		
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)		
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation		

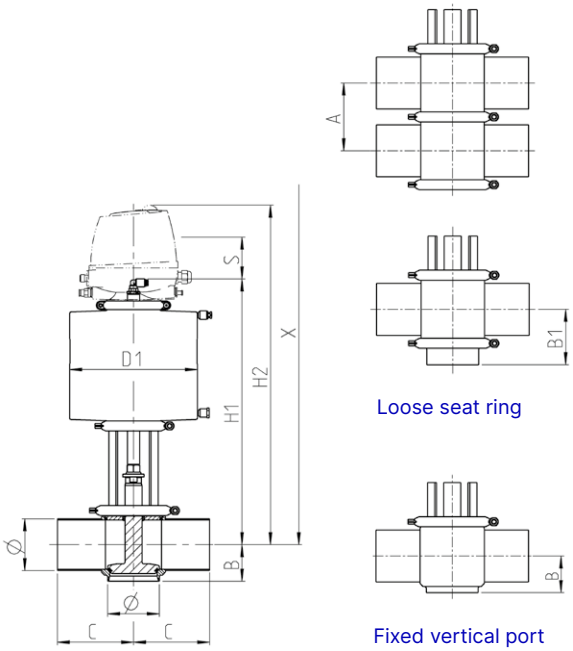
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	N			-	/	-	E		-	60/4	-	V0	-		3	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type N_V
Single-seat Long-stroke Valve





Loose seat ring

Fixed vertical port

Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	4.8 bar (70 psi)
Product pressure	DN 65 – DN 80, OD 2 ½" – OD 3": 10 bar (145 psi)
	DN 100, OD 4": 5.2 bar (75 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped or welded seat ring
Marking / Certificates	CE, EHEDG, FDA

	Pipe			Housing	Actuator	Dimensions			Valve	
Nominal width	Ø [mm]	A [mm]	B [mm]	B1 [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 65	70.0 × 2.00	96.0	52	83.0	125	210	421	550	695	41.5	23
DN 80	85.0 × 2.00	111.0	60	90.5	125	210	429	558	703	56.5	23
DN 100	104.0 × 2.00	130.0	70	100.0	125	210	438	567	712	60.0	25
OD 2 ½"	63.5 × 1.65	90.0	54	80.0	125	210	425	554	699	42.5	23
OD 3"	76.2 × 1.65	103.0	54	86.5	125	210	432	561	706	55.5	23
OD 4"	101.6 × 2.11	127.5	69	99.0	125	210	440	569	714	60.5	26

Position	Description of the order code for the standard version											
1	**Valve type**											
	N	VARIVENT® single-seat valve										
2	**Housing combinations**											
	A	B	C	E	L	T						
												
3	**Supplement to the valve type**											
	V	Long-stroke										
4/5	**Nominal width (upper housing/lower housing)**											
	DN 65	OD 2 ½"										
	DN 80	OD 3"										
	DN 100	OD 4"										
6	**Actuator type**											
	L	Air/Spring, long stroke										
7	**Non-actuated position**											
	Z	Spring-to-close (NC)										
	A	Spring-to-open (NO)										
8	**Standard configuration with 4.8 bar air supply pressure for 10 bar (DN 65 – DN 80, OD 2 ½" – OD 3") or 5.2 bar (DN 100, OD 4") product pressure**											
	Actuator (spring-to-close)		Actuator (spring-to-open)									
	ZEF/V		ZEF/V									
9	**Valve seat version**		Housing combination									
			A	B	C	E	L	T				
	L0	Loose seat ring / Clamp connection	•	•	•	•	•	•				
	V0	Welded seat ring / Port orientation 0° or fixed vertical port	•	•	•	•	•	•				
	V1	Welded seat ring / Port orientation 90°	•	•	•	•						
	V2	Welded seat ring / Port orientation 180°		•								
	V3	Welded seat ring / Port orientation 270°		•								
10	**Seal material in contact with the product**											
	1	EPDM (FDA)										
	2	FKM (FDA)										
	3	HNBR (FDA)										
11	**Surface quality of the housing**											
	2	Inside R_a ≤ 0.8 µm, outside matt blasted										
12	**Connection fittings**											
	N	Welding end										
13	**Accessories**											
	/52	Adhesive ID tag										
+												
14–19	**Air connection / Control and feedback system**											
	00000M	Metric for air hose Ø 6/4 mm										
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)										
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation										

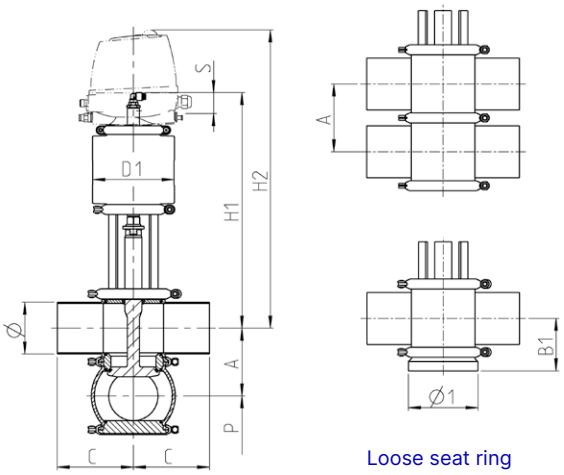
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	N		V	-	/	-	L		-	ZEF/V	-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type U
Single-seat Valve





Loose seat ring

Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped or welded seat ring
Marking / Certificates	CE FDA

	Pipe				Housing	Actuator	Dimensions			Valve	
Nominal width	Ø [mm]	Ø1 [mm]	A [mm]	B1 [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	P [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	70 × 2	50.0	50.0	90.0	99	294	423	200	18	8
DN 40	41.0 × 1.50	85 × 2	62.0	56.0	90.0	110	335	464	200	25	11
DN 50	53.0 × 1.50	85 × 2	74.0	62.0	90.0	110	341	470	200	29	11
DN 65	70.0 × 2.00	114 × 3	96.0	78.0	125.0	135	352	481	230	30	17
DN 80	85.0 × 2.00	114 × 3	111.0	85.5	125.0	135	360	489	230	30	18
DN 100	104.0 × 2.00	154 × 2	130.0	95.0	125.0	170	399	528	250	30	25
DN 125	129.0 × 2.00	184 × 3	155.0	107.5	150.0	260	555	684	300	60	56
DN 150	154.0 × 2.00	212 × 4	180.0	120.0	150.0	260	579	708	300	60	63
OD 1"	25.4 × 1.65	70 × 2	46.0	48.0	90.0	99	292	421	200	22	8
OD 1 ½"	38.1 × 1.65	85 × 2	59.0	54.5	90.0	110	337	466	200	25	10
OD 2"	50.8 × 1.65	85 × 2	71.5	60.8	90.0	110	343	472	200	28	11
OD 2 ½"	63.5 × 1.65	114 × 3	90.0	75.0	125.0	135	356	485	230	29	17
OD 3"	76.2 × 1.65	114 × 3	103.0	81.5	125.0	135	363	492	230	31	17
OD 4"	101.6 × 2.11	154 × 2	127.5	93.8	125.0	170	401	530	250	29	25
OD 6"	152.4 × 2.77	212 × 4	177.0	118.5	150.0	260	578	707	300	60	64
IPS 2"	60.3 × 2.00	81.0	65.5	114.3	110	338	467	200	200	29	12
IPS 3"	88.9 × 2.30	115.0	87.5	152.5	135	358	487	230	230	30	19
IPS 4"	114.3 × 2.30	140.0	100.0	152.5	170	394	523	250	250	30	27
IPS 6"	168.3 × 2.77	192.0	126.0	152.5	260	573	702	300	300	60	65

Position	Description of the order code for the standard version						
1	**Valve type**						
	U	VARIVENT® single-seat valve					
2	**Housing combinations**						
	A	B	C	E	F*	D*	
							
3	**Supplement to the valve type**						
	Reserved for options						
4/5	**Nominal width (upper housing/lower housing)**						
	DN 25	OD 1"					
	DN 40	OD 1 ½"					
	DN 50	OD 2"	IPS 2"				
	DN 65	OD 2 ½"					
	DN 80	OD 3"	IPS 3"				
	DN 100	OD 4"	IPS 4"				
	DN 125						
	DN 150	OD 6"	IPS 6"				
6	**Actuator type**						
	S	Air / Spring					
7	**Non-actuated position**						
	Z	Spring-to-close (NC)					
	A	Spring-to-open (NO)					
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**						
	Actuator (spring-to-close)		Actuator (spring-to-open)		For nominal widths		
	AA		AA		DN 25, OD 1"		
	BB		BA		DN 40, DN 50, OD 1 ½", OD 2", IPS 2"		
	CD		CB		DN 65, DN 80, OD 2 ½", OD 3", IPS 3"		
	DF		DD		DN 100, OD 4", IPS 4"		
	SH6		EF6		DN 125		
	SK6		SG6		DN 150, OD 6", IPS 6"		
9	**Valve seat version**		Housing combination				
			A	B	C	E	F*	D*
	L0	Loose seat ring / Clamp connection	•	•	•	•	•	•
	V0	Welded seat ring / Port orientation 0° or fixed vertical port	•	•	•	•		
	V1	Welded seat ring / Port orientation 90°	•	•	•	•		
	V2	Welded seat ring / Port orientation 180°		•				
	V3	Welded seat ring / Port orientation 270°		•				
10	**Seal material in contact with the product**							
	1	EPDM (FDA)						
	2	FKM (FDA)						
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")						
11	**Surface quality of the housing**							
	2	Inside R_a ≤ 0.8 µm, outside matt blasted						
12	**Connection fittings**							
	N	Welding end						
13	**Accessories**							
	/52	Adhesive ID tag						
+								
14–19	**Air connection / Control and feedback system**							
	00000M	Metric for air hose Ø 6/4 mm						
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)						
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation						

* with housing connection flange U

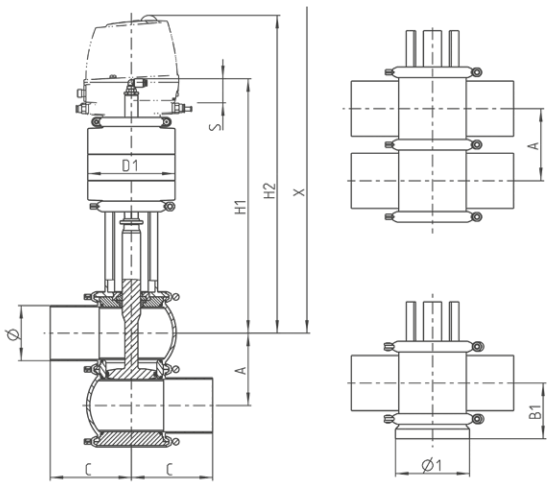
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	U			-	/	-	S		-		-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type U_R
Radial Sealing Single-seat Valve





Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	$R_a \leq 0.8$ µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Welded seat ring
Marking / Certificates	CE FDA

	Pipe			Housing	Actuator	Dimensions			Valve	
Nominal width	Ø [mm]	Ø1 [mm]	A [mm]	B1 [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	70 × 2	50.0	50.0	90.0	99	294	423	485	18	8
DN 40	41.0 × 1.50	85 × 2	62.0	56.0	90.0	110	335	464	538	25	11
DN 50	53.0 × 1.50	85 × 2	74.0	62.0	90.0	110	341	470	556	29	11
DN 65	70.0 × 2.00	114 × 3	96.0	78.0	125.0	135	382	511	622	30	17
DN 80	85.0 × 2.00	114 × 3	111.0	85.5	125.0	135	390	519	645	30	18
DN 100	104.0 × 2.00	154 × 2	130.0	95.0	125.0	170	399	528	673	30	25
DN 125	129.0 × 2.00	184 × 3	155.0	107.5	150.0	260	555	684	854	60	56
DN 150	154.0 × 2.00	212 × 4	180.0	120.0	150.0	260	579	708	903	60	63
OD 1"	25.4 × 1.65	70 × 2	46.0	48.0	90.0	99	292	421	479	22	8
OD 1 ½"	38.1 × 1.65	85 × 2	59.0	54.5	90.0	110	337	466	537	25	10
OD 2"	50.8 × 1.65	85 × 2	71.5	60.8	90.0	110	343	472	556	28	11
OD 2 ½"	63.5 × 1.65	114 × 3	90.0	75.0	125.0	135	386	515	620	29	17
OD 3"	76.2 × 1.65	114 × 3	103.0	81.5	125.0	135	393	522	640	31	17
OD 4"	101.6 × 2.11	154 × 2	127.5	93.8	125.0	170	401	530	673	29	25
OD 6"	152.4 × 2.77	212 × 4	177.0	118.5	150.0	260	578	707	899	60	64

Position	Description of the order code for the standard version											
1	**Valve type**											
	U	VARIVENT® single-seat valve										
2	**Housing combinations**											
	A	B	C	E	F*	D*						
												
3	**Supplement to the valve type**											
	R	Radial sealing										
4/5	**Nominal width (upper housing/lower housing)**											
	DN 25	OD 1"										
	DN 40	OD 1 ½"										
	DN 50	OD 2"										
	DN 65	OD 2 ½"										
	DN 80	OD 3"										
	DN 100	OD 4"										
	DN 125											
	DN 150	OD 6"										
6	**Actuator type**											
	S	Air / Spring										
7	**Non-actuated position**											
	Z	Spring-to-close (NC)										
	A	Spring-to-open (NO)										
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**											
	Actuator (spring-to-close)		Actuator (spring-to-open)		For nominal widths							
	AA		AA		DN 25, OD 1"							
	BB		BA		DN 40, DN 50, OD 1 ½", OD 2"							
	CD		CB		DN 65, DN 80, OD 2 ½", OD 3"							
	DF		DD		DN 100, OD 4"							
	SH6		EF6		DN 125							
	SK6		SG6		DN 150, OD 6"							
9	**Valve seat version**				Housing combination							
					A	B	C	E	F*	D*		
	L0	Loose seat ring / Clamp connection			•	•	•	•	•	•		
	V0	Welded seat ring / Port orientation 0° or fixed vertical port			•	•	•	•				
	V1	Welded seat ring / Port orientation 90°			•	•	•	•				
	V2	Welded seat ring / Port orientation 180°				•						
	V3	Welded seat ring / Port orientation 270°				•						
10	**Seal material in contact with the product**											
	1	EPDM (FDA)										
	2	FKM (FDA)										
	3	HNBR (FDA); (up to DN 100, OD 4")										
11	**Surface quality of the housing**											
	2	Inside R_a ≤ 0.8 µm, outside matt blasted										
12	**Connection fittings**											
	N	Welding end										
13	**Accessories**											
	/52	Adhesive ID tag										
+												
14–19	**Air connection / Control and feedback system**											
	00000M	Metric for air hose Ø 6/4 mm										
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)										
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation										

* Only with loose seat ring; with housing connection flange U, U-S, T or T-S

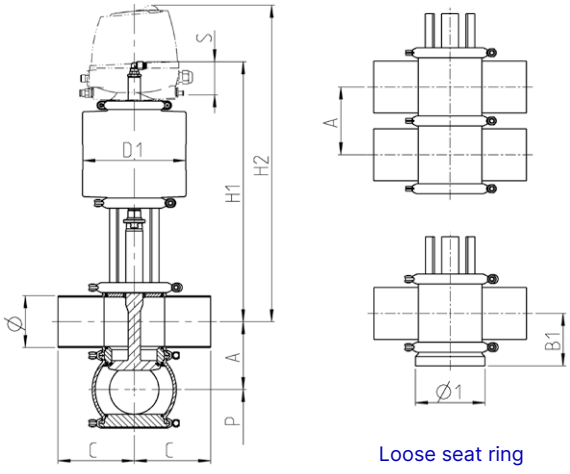
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	U		R	-	/	-	S		-		-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type U_V
Single-seat Long-stroke Valve





Loose seat ring

Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	4.8 bar (70 psi)
Product pressure	DN 80, OD 3": 5 bar (73 psi)
	DN 100, OD 4": 5.6 bar (81 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped or welded seat ring
Marking / Certificates	CE FDA

	Pipe		Housing			Actuator	Dimensions				Valve
Nominal width	Ø [mm]	Ø1 [mm]	A [mm]	B1 [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	P [mm]	Stroke S [mm]	Weight [kg]
DN 80	85.0 × 2.00	114 × 3	111.0	85.5	125	170	390	519	230	40	21
DN 100	104.0 × 2.00	154 × 2	130.0	95.0	125	210	409	538	250	40	29
OD 3"	76.2 × 1.65	114 × 3	103.0	81.5	125	170	393	522	230	41	21
OD 4"	101.6 × 2.11	154 × 2	127.5	93.8	125	210	411	540	250	39	29

Position	Description of the order code for the standard version											
1	**Valve type**											
	U	VARIVENT® single-seat valve										
2	**Housing combinations**											
	A	B	C	E	F*	D*						
												
3	**Supplement to the valve type**											
	V	Long-stroke										
4/5	**Nominal width (upper housing/lower housing)**											
	DN 80	OD 3"										
	DN 100	OD 4"										
6	**Actuator type**											
	S	Air/Spring										
7	**Non-actuated position**											
	Z	Spring-to-close (NC)										
	A	Spring-to-open (NO)										
8	**Standard configuration with 4.8 bar air supply pressure for 5 bar (DN 80, OD 3") or 5.6 bar (DN 100, OD 4" product pressure**											
	Actuator (spring-to-close)		Actuator (spring-to-open)		For nominal widths							
	DD5		DD5		DN 80, OD 3"							
	EF5		EF5		DN 100, OD 4"							
9	**Valve seat version**		Housing combination									
			A		B		C		E		F*	D*
	L0	Loose seat ring / Clamp connection	•		•		•		•		•	•
	V0	Welded seat ring / Port orientation 0° or fixed vertical port	•		•		•		•			
	V1	Welded seat ring / Port orientation 90°	•		•		•		•			
	V2	Welded seat ring / Port orientation 180°			•							
	V3	Welded seat ring / Port orientation 270°			•							
10	**Seal material in contact with the product**											
	1	EPDM (FDA)										
	2	FKM (FDA)										
	3	HNBR (FDA)										
11	**Surface quality of the housing**											
	2	Inside R_a ≤ 0.8 µm, outside matt blasted										
12	**Connection fittings**											
	N	Welding end										
13	**Accessories**											
	/52	Adhesive ID tag										
+												
14–19	**Air connection / Control and feedback system**											
	00000M	Metric for air hose Ø 6/4 mm										
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)										
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation										

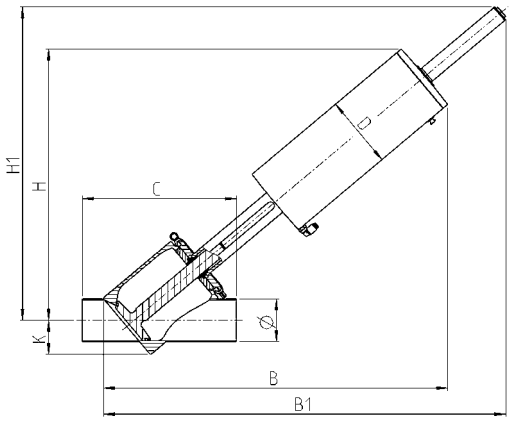
* with housing connection flange U

The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	U		V	-	/	-	S		-		-		-		2	N	/52	+							

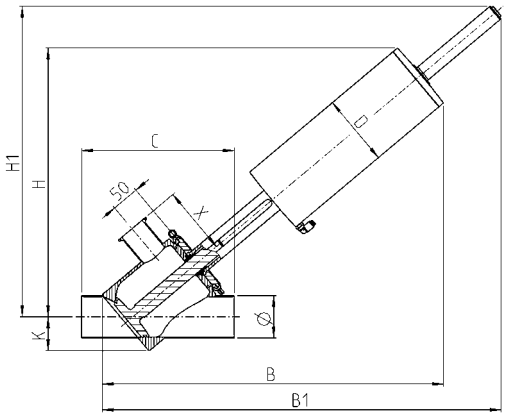
For order codes differing from the standard version, please refer to section 8.

ECOVENT® Type NIV/ECO
Angle valve



Angle Valve





Angle Valve with CIP Connection

Technical data of the standard version	
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6–8 bar (87–116 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air / spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Welded seat ring
Marking / Certificates	CE FDA

	Pipe			Housing	Actuator	Dimensions				Valve	
Nominal width	Ø [mm]	B [mm]	B1 [mm]	C [mm]	D1 [mm]	H [mm]	H1 [mm]	K [mm]	X* [mm]	Stroke S [mm]	Weight [kg]
OD 2 ½"	63.5 × 1.65	491	586	250	129	454	549	50.3	123	67	18.5
OD 3"	76.2 × 1.65	618	727	275	129	489	568	61.5	123	120	19.5
OD 4"	101.6 × 2.11	733	829	360	170	576	641	79.5	143	155	40.0

* Dimension is valid for Angle Valve with CIP Connection

Position	Description of the order code for the standard version			
1	**Valve type**			
	N	ECOVENT® Angle valve		
2	**Housing combination**			
	I 			
3	**Supplement to the valve type**			
	V/ECO	Long stroke		
4/5	**Nominal width (upper housing / lower housing)**			
	OD 2 ½"			
	OD 3"			
	OD 4"			
6	**Actuator type**			
	E	Air / Spring		
7	**Non-actuated position**			
	Z	Spring-to-close (NC)		
	A	Spring-to-open (NO)		
8	**Standard configuration with 6–8 bar air supply pressure**			
	Actuator (spring-to-close)	For nominal widths	Product pressure	
			P1 (closing)	P2 (opening)
	ECD/12	OD 2 ½"	6 bar (87 psi)	3 bar (43.5 psi)
	ECD/12	OD 3"	5 bar (87 psi)	5 bar (72.5 psi)
	EDF/16	OD 4"	6 bar (87 psi)	6 bar (87 psi)
9	**Valve seat version**			
	V0	Fixed port		
10	**Seal material in contact with the product**			
	1	EPDM (FDA)		
	2	FKM (FDA)		
	3	HNBR (FDA)		
11	**Surface quality of the housing**			
	2	Inside $R_a \leq 0.8$ µm, outside matt blasted		
12	**Connection fittings**			
	N	Welding end		
13	**Accessories**			
	/33	With CIP Housing		
	/52	Adhesive ID tag		
+				
14–19	**Air connection**			
	00000M	Metric for air hose Ø 6/4 mm		
	00000Z	Inch for air hose Ø OD ¼" (6.35/4.35 mm)		

The code is composed as following, depending on the chosen configuration:

Position	**1**	**2**	**3**		**4/5**		**6**	**7**		**8**		**9**		**10**	**11**	**12**	**13**		**14 to 19**						
Code	N	I	V/ECO	-	/	-	E		-		-	V0	-		2	N		+							

For order codes differing from the standard version, please refer to section 8.

2 DIVERT VALVES

VARIVENT® Hygienic Seat Valves



Overview of Single-seat Valves

Single-seat divert valves
VARIVENT® and ECOVENT® single-seat divert valves are used for simple divert functions in hygienic applications. The valves are characterized by their ease of operation and flexibility. The individual variants are designed for different flow directions.

Special features
Certified, hygienic configuration
Metallic stop
Flexibility because of the modular principle
Proven seal geometry
Availability of two valve series

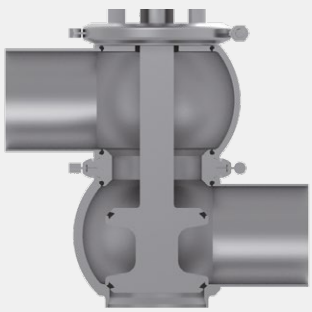




Overview of Single-seat Valves

Function of the valve
In single-seat divert valves, there is only one seal for each switching position in the valve disc separating the particular pipelines from one another. This means liquid can pass from one pipeline to the other in the eventuality of a seal defect. For this reason, single-seat divert valves are not suitable for separating incompatible fluids.

Application examples
In practice, these valves are frequently used in CIP supply and return lines. One typical application is also found at the end of a valve block in which the valves are fitted as divert valves between the process line and the drainage (e.g. during pushing out).



Simple divert valve with only one seal

VARIVENT®
The structure of the VARIVENT® modular system means that different valve configurations (closing direction of the valve disc) and numerous options are available. Please refer to the options section (section 7) for information about these.

VARIVENT® long-stroke valves are used for manufacturing products with relatively large particles or for viscous products, such as strawberry yoghurt.



Sizes	
Single-seat divert valves	Long-stroke divert valves
DN 25 – DN 150	DN 65 – DN 100
OD 1" – OD 6"	OD 2 ½" – OD 4"
IPS 2" – IPS 6"	

ECOVENT®
The ECOVENT® valve series is characterized by its compact design. Contrary to the VARIVENT® systems with multiple options, this series provides a simple and economical solution for standard requirements.

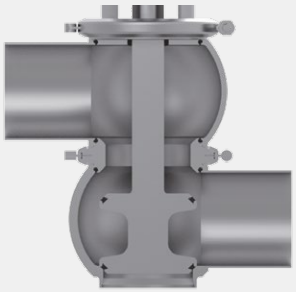


Sizes
Single-seat divert valves
DN 10 – DN 100
OD 1" – OD 4"

Overview of Single-seat Valves

Housing combinations
VARIVENT® and ECOVENT® single-seat divert valves are available with an extremely wide range of housing combinations.

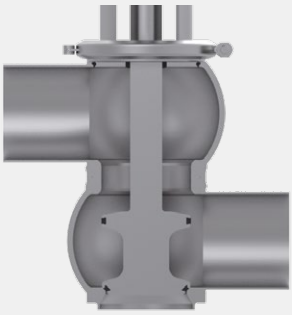
Valve seat version
The valves are configured with a clamped housing connection that is characterized by a high level of flexibility during installation of the valve.



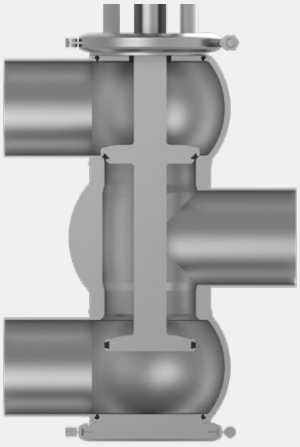
Valve type W
(Spring-to-close, NC)

Maintenance
To be able to service the Single-seat Divert Vales type W or X, the valve disc must be removed through the lower housing or together with the upper housing from the pipework. For this reason, it is recommended to provide a detachable connection, e.g. a VARIVENT® flange connection, on the relevant housings concerned or in the connected pipework system.

The radial sealing divert valves type W_R and X_R were developed to offer the advantage of a welded valve seat design. This design is characterised by low maintenance requirements. The one-piece valve disc with its radial seal can simply be removed upwards through the seat rings. Furthermore, there is no need to replace O-rings in the valve seat.



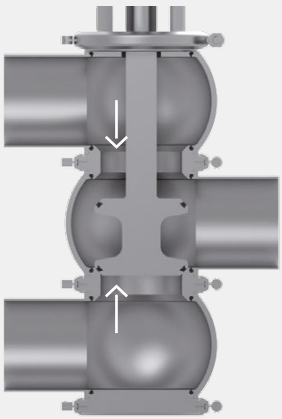
Valve type W_R
(Spring-to-close, NC)



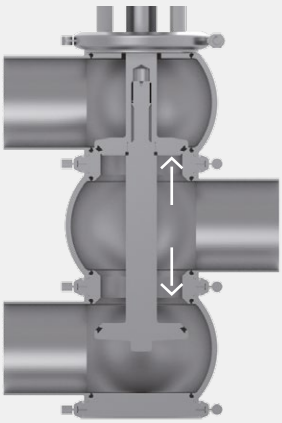
Valve type X_R
(Spring-to-close, NC)

Recommended flow direction

The single-seat divert valve type W is used for merging products from two pipelines, whereas valve type X has been designed for product distribution. The valves are characterized by their ease of operation. Valve type X is only available in the VARIVENT® series, thus making clear one of the major differences between VARIVENT® and ECOVENT®: the difference in the number of variants available in both series.

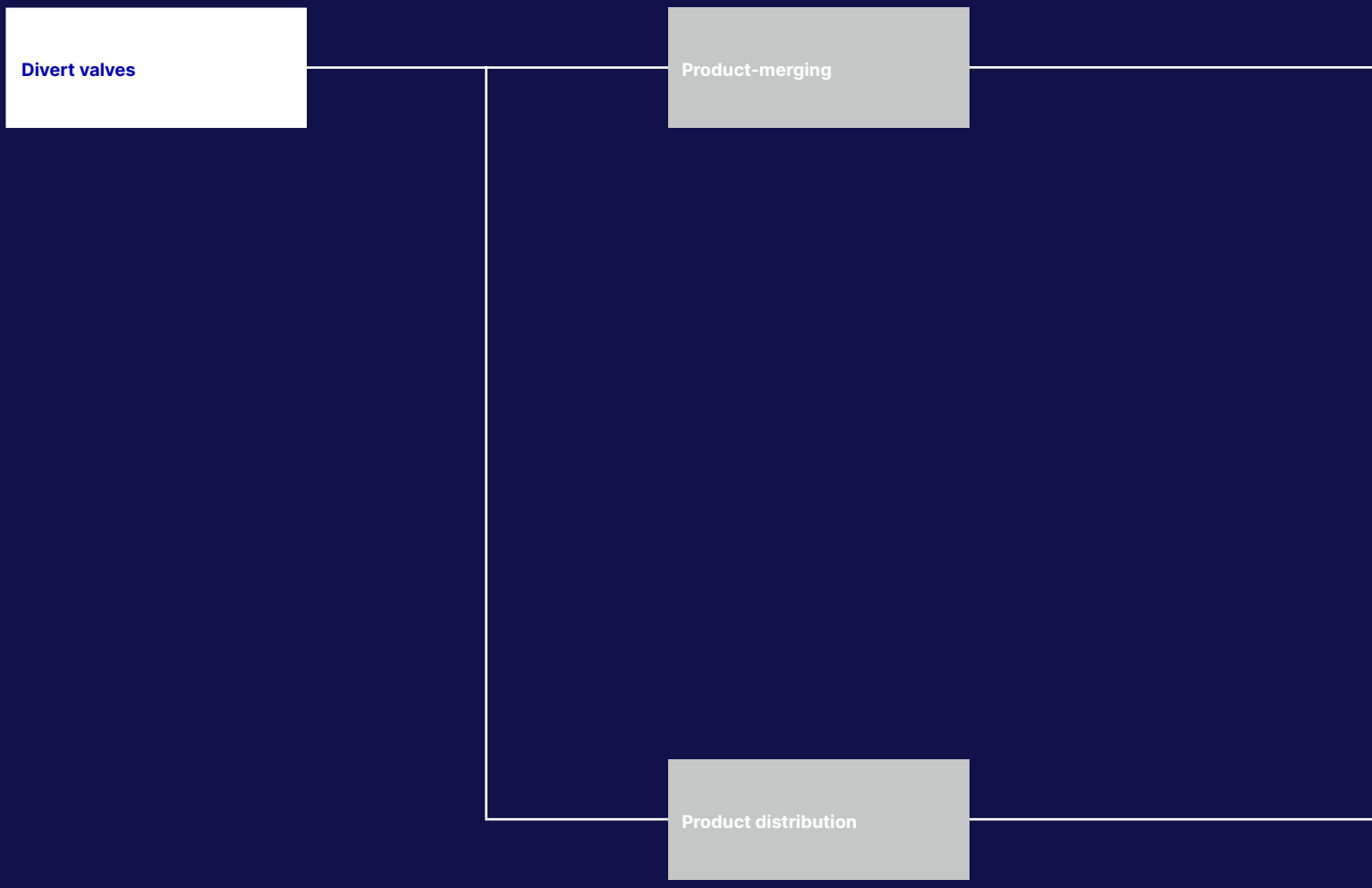


Valve type W
(Spring-to-close, NC)



Valve type X
(Spring-to-close, NC)

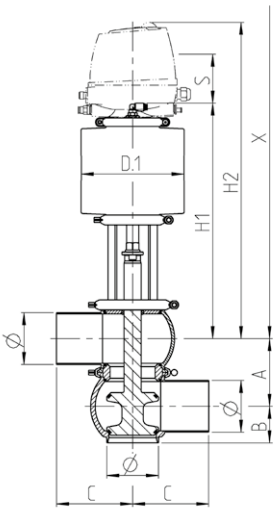
Selection Matrix

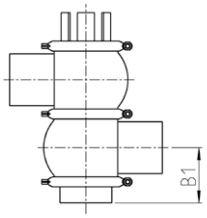



Modular system
VARIVENT®
single-seat valve
type W
1
Compact design
ECOVENT®
single-seat valve
type W / ECO
2
Nominal width
DN 10 or DN 15
ECOVENT®
single-seat valve
type W / ECO
3
Optimized maintenance
with radial sealing
VARIVENT®
radial sealing single-seat valve
type W_R
4
Viscous products
or products with
large particles
VARIVENT®
single-seat long-stroke valve
type W_V
5
Modular system
VARIVENT®
single-seat valve
type X
6
Optimized maintenance
with radial sealing
VARIVENT®
radial sealing single-seat valve
type X_R
7
Viscous products
or products with
large particles
VARIVENT®
single-seat long-stroke valve
type X_V
8

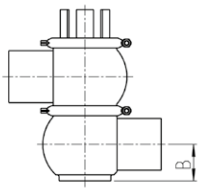
VARIVENT® Type W
Single-seat Valve







Loose seat ring



Fixed vertical port

Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	$R_a \leq 0.8$ µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring or fixed vertical port
Marking / Certificates	CE FDA

	Pipe			Housing	Actuator	Dimensions			Valve	
Nominal width	Ø [mm]	A [mm]	B [mm]	B1 [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	50.0	31	58.0	90.0	99	294	423	583	11	8
DN 40	41.0 × 1.50	62.0	39	64.0	90.0	135	335	464	624	25	11
DN 50	53.0 × 1.50	74.0	41	70.0	90.0	135	341	470	630	25	12
DN 65	70.0 × 2.00	96.0	52	83.0	125.0	170	382	511	796	25	20
DN 80	85.0 × 2.00	111.0	60	90.5	125.0	170	390	519	804	25	21
DN 100	104.0 × 2.00	130.0	70	100.0	125.0	210	399	528	813	25	29
DN 125	129.0 × 2.00	155.0	113	112.0	150.0	260	555	684	1,074	55	57
DN 150	154.0 × 2.00	180.0	125	125.0	150.0	210	708	837	1,227	55	72
OD 1"	25.4 × 1.65	46.0	29	56.0	90.0	99	292	421	581	7	8
OD 1 ½"	38.1 × 1.65	59.0	39	62.5	90.0	135	337	466	626	22	11
OD 2"	50.8 × 1.65	71.5	42	69.0	90.0	135	343	472	632	22	12
OD 2 ½"	63.5 × 1.65	90.0	54	80.0	125.0	170	386	515	800	19	20
OD 3"	76.2 × 1.65	103.0	54	86.5	125.0	170	393	522	807	17	20
OD 4"	101.6 × 2.11	127.5	69	99.0	125.0	210	401	530	815	22	29
OD 6"	152.4 × 2.77	177.0	124	123.5	150.0	210	707	836	1,226	55	72
IPS 2"	60.3 × 2.00	81.0	44	73.5	114.3	135	338	467	627	25	13
IPS 3"	88.9 × 2.30	115.0	63	92.5	152.5	170	388	517	802	25	21
IPS 4"	114.3 × 2.30	140.0	75	105.0	152.5	210	394	523	808	25	30
IPS 6"	168.3 × 2.77	192.0	131	131.0	152.5	210	702	831	1,221	55	73

Position	Description of the order code for the standard version												
1	**Valve type**												
	W	VARIVENT® divert valve											
2	**Housing combinations**												
	K	V	P	O	W	Y	X	Z	U	M	N	G	
													
3	**Supplement to the valve type**												
	Reserved for options												
4/5	**Nominal width (upper housing/lower housing)**												
	DN 25	OD 1"											
	DN 40	OD 1 ½"											
	DN 50	OD 2"	IPS 2"										
	DN 65	OD 2 ½"											
	DN 80	OD 3"	IPS 3"										
	DN 100	OD 4"	IPS 4"										
	DN 125												
	DN 150	OD 6"	IPS 6"										
6	**Actuator type**												
	S	Air / Spring											
7	**Non-actuated position**												
	Z	Spring-to-close (NC)											
	A	Spring-to-open (NO)											
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**												
	Actuator (spring-to-close)		Actuator (spring-to-open)							For nominal widths			
	AA		AA							DN 25, OD 1"			
	CB		CB							DN 40, DN 50, OD 1 ½", OD 2", IPS 2"			
	DD		DD							DN 65, DN 80, OD 2 ½", OD 3", IPS 3"			
	EF		EF							DN 100, OD 4", IPS 4"			
	SH6		SH6							DN 125			
	TK6		TK6							DN 150, OD 6", IPS 6"			
9	**Valve seat version**			Housing combination									
				K	V	P	O	W	Y	X	Z	U	M	N	G
	L00	Loose seat ring / Clamp connection		•	•	•	•	•	•	•	•	•	•	•	•
	V00	Fixed vertical port		•	•	•	•								
10	**Seal material in contact with the product**												
	1	EPDM (FDA)											
	2	FKM (FDA)											
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")											
11	**Surface quality of the housing**												
	2	Inside R_a ≤ 0.8 µm, outside matt blasted											
12	**Connection fittings**												
	N	Welding end											
13	**Accessories**												
	/52	Adhesive ID tag											
+													
14–19	**Air connection / Control and feedback system**												
	00000M	Metric for air hose Ø 6/4 mm											
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)											
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation											

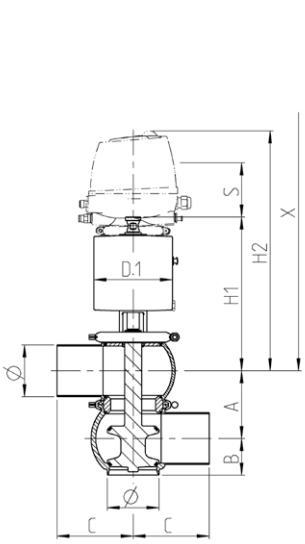
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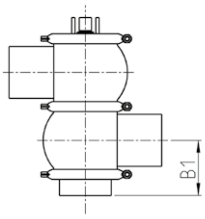
Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	W			-	/	-	S		-		-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

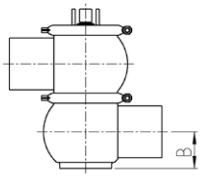
ECOVENT® Type W/ECO
Single-seat Valve







Loose seat ring



Fixed vertical port

Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	$R_a \leq 0.8$ µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring or fixed vertical port
Marking / Certificates	CE FDA

	Pipe			Housing	Actuator	Dimensions			Valve	
Nominal width	Ø [mm]	A [mm]	B [mm]	B1 [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	50.0	31	58.0	90	85	209	338	498	15	6
DN 40	41.0 × 1.50	62.0	39	64.0	90	129	243	372	532	24	10
DN 50	53.0 × 1.50	74.0	41	70.0	90	129	249	378	538	24	10
DN 65	70.0 × 2.00	96.0	52	83.0	125	170	257	386	671	26	17
DN 80	85.0 × 2.00	111.0	60	90.5	125	170	264	393	678	26	18
DN 100	104.0 × 2.00	130.0	70	100.0	125	170	274	403	688	26	23
OD 1"	25.4 × 1.65	46.0	29	56.0	90	85	207	336	496	11	6
OD 1 ½"	38.1 × 1.65	59.0	39	62.5	90	129	241	370	530	24	9
OD 2"	50.8 × 1.65	71.5	42	69.0	90	129	248	377	537	24	10
OD 2 ½"	63.5 × 1.65	90.0	54	80.0	125	170	254	383	668	26	18
OD 3"	76.2 × 1.65	103.0	54	86.5	125	170	260	389	674	26	18
OD 4"	101.6 × 2.11	127.5	69	99.0	125	170	273	402	687	26	23

Position	Description of the order code for the standard version												
1	**Valve type**												
	W	ECOVENT® divert valve											
2	**Housing combinations**												
	K	V	P	O	W	Y	X	Z	U	M	N	G	
													
3	**Supplement to the valve type**												
	/ECO												
4/5	**Nominal width (upper housing/lower housing)**												
	DN 25	OD 1"											
	DN 40	OD 1 ½"											
	DN 50	OD 2"											
	DN 65	OD 2 ½"											
	DN 80	OD 3"											
	DN 100	OD 4"											
6	**Actuator type**												
	E	Air / Spring											
7	**Non-actuated position**												
	Z	Spring-to-close (NC)											
	A	Spring-to-open (NO)											
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**												
	Actuator (spring-to-close)		Actuator (spring-to-open)				For nominal widths						
	EAA		EAA				DN 25, OD 1"						
	ECB		ECB				DN 40, DN 50, OD 1 ½", OD 2"						
	EDD		EDD				DN 65, DN 80, OD 2 ½", OD 3"						
	EDD*		EDD*				DN 100, OD 4"						
9	**Valve seat version**			Housing combination									
				K	V	P	O	W	Y	X	Z	U	M	N	G
	L00	Loose seat ring / Clamp connection		•	•	•	•	•	•	•	•	•	•	•	•
	V00	Fixed vertical port		•	•	•	•								
10	**Seal material in contact with the product**												
	1	EPDM (FDA)											
	2	FKM (FDA)											
	3	HNBR (FDA)											
11	**Surface quality of the housing**												
	2	Inside R_a ≤ 0.8 µm, outside matt blasted											
12	**Connection fittings**												
	N	Welding end											
13	**Accessories**												
	/52	Adhesive ID tag											
+													
14–19	**Air connection / Control and feedback system**												
	00000M	Metric for air hose Ø 6/4 mm											
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)											
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation											

* with air support

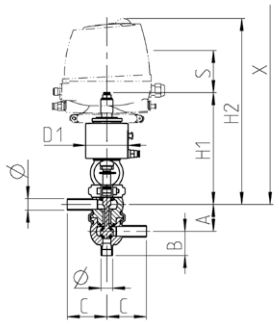
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	W		/ECO	-	/	-	E		-		-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

ECOVENT® Type W/ECO DN 10, DN 15
Single-seat Valve





Technical data of the standard version

Recommended flow direction	Against the closing direction
Material housing	1.4435 (AISI 316L)
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	4–8 bar (58–116 psi)
Product pressure	10 bar (145 psi)
Surface in contact with the product	$R_a \leq 0.8$ µm
External housing surface	Ground
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Fixed vertical port
Marking / Certificates	CE FDA

	Pipe		Housing		Actuator	Dimensions			Valve	
Nominal width	Ø [mm]	A [mm]	B [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 10	13 × 1.50	44	40	65	70	166	295	345	6	5
DN 15	19 × 1.50	47	40	65	70	169	298	348	6	5

Position	Description of the order code for the standard version		
1	**Valve type**		
	W	ECOVENT® divert valve	
2	**Housing combinations**		
	K	P	O	V
			
3	**Supplement to the valve type**		
	/ECO	ECOVENT®	
4/5	**Nominal width (upper housing/lower housing)**		
	DN 10		
	DN 15		
6	**Actuator type**		
	E	Air / Spring	
7	**Non-actuated position**		
	Z	Spring-to-close (NC)	
	A	Spring-to-open (NO)	
8	**Standard configuration with 4–8 bar air supply pressure for 10 bar product pressure (higher pressures on request)**		
	Actuator (spring-to-close)		Actuator (spring-to-open)
	60/4		60/4
9	**Valve seat version**		
	V0	Fixed vertical port	
10	**Seal material in contact with the product**		
	1	EPDM (FDA)	
	2	FKM (FDA)	
	3	HNBR (FDA)	
11	**Surface quality of the housing**		
	3	Inside R_a ≤ 0.8 µm, outside ground	
12	**Connection fittings**		
	N	Welding end	
13	**Accessories**		
	/52	Adhesive ID tag	
+			
14–19	**Air connection / Control and feedback system**		
	00000M	Metric for air hose Ø 6/4 mm	
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)	
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation	

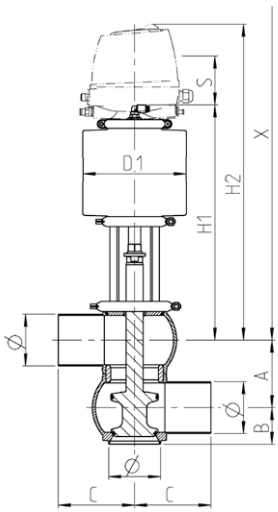
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	W		/ECO	-	/	-	E		-	60/4	-	V0	-		3	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type W_R
Radial Sealing Single-seat Valve





Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Welded seat ring
Marking / Certificates	CE FDA

	Pipe			Housing	Actuator			Dimensions		Valve
Nominal width	Ø [mm]	A [mm]	B [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	50.0	31	90	99	294	423	583	20	8
DN 40	41.0 × 1.50	62.0	39	90	110	335	464	624	30	11
DN 50	53.0 × 1.50	74.0	41	90	110	341	470	630	30	11
DN 65	70.0 × 2.00	96.0	52	125	135	382	511	796	30	19
DN 80	85.0 × 2.00	111.0	60	125	135	390	519	804	30	20
DN 100	104.0 × 2.00	130.0	70	125	170	399	528	813	30	27
OD 1"	25.4 × 1.65	46.0	29	90	99	292	421	581	20	8
OD 1 ½"	38.1 × 1.65	59.0	39	90	110	337	466	626	27	11
OD 2"	50.8 × 1.65	71.5	42	90	110	343	472	632	28	11
OD 2 ½"	63.5 × 1.65	90.0	54	125	135	386	515	800	25	19
OD 3"	76.2 × 1.65	103.0	54	125	135	393	522	807	30	19
OD 4"	101.6 × 2.11	127.5	69	125	170	401	530	815	28	27

Position	Description of the order code for the standard version											
1	**Valve type**											
	W	VARIVENT® divert valve										
2	**Housing combinations**											
	K	V	P	O	W	Y	X	Z	U	M	N	G
												
3	**Supplement to the valve type**											
	R	Radial sealing										
4/5	**Nominal width (upper housing/lower housing)**											
	DN 25	OD 1"										
	DN 40	OD 1 ½"										
	DN 50	OD 2"										
	DN 65	OD 2 ½"										
	DN 80	OD 3"										
	DN 100	OD 4"										
6	**Actuator type**											
	S	Air / Spring										
7	**Non-actuated position**											
	Z	Spring-to-close (NC)										
	A	Spring-to-open (NO)										
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**											
	Actuator (spring-to-close)	Actuator (spring-to-open)	For nominal widths									
	AA	AA	DN 25, OD 1"									
	CB	CB	DN 40, DN 50, OD 1 ½", OD 2"									
	DD	DD	DN 65, DN 80, OD 2 ½", OD 3"									
	EF	EF	DN 100, OD 4"									
9	**Valve seat version***		Housing combination									
			K	V	P	O	W	Y	X	Z	U	M	N	G
	V00	Welded seat ring / Port orientation 0°	•	•	•	•	•	•	•	•	•	•	•	•
	V10	Welded seat ring / Port orientation 90°	•	•	•	•	•	•	•	•	•	•	•	•
	V20	Welded seat ring / Port orientation 180°	•				•	•						
	V30	Welded seat ring / Port orientation 270°	•				•	•						
10	**Seal material in contact with the product**											
	1	EPDM (FDA)										
	2	FKM (FDA)										
	3	HNBR (FDA)										
11	**Surface quality of the housing**											
	2	Inside $R_a \leq 0.8$ µm, outside matt blasted (DN, OD)										
12	**Connection fittings**											
	N	Welding end										
13	**Accessories**											
	/52	Adhesive ID tag										
+												
14–19	**Air connection / Control and feedback system**											
	00000M	Metric for air hose Ø 6/4 mm										
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)										
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation										

* First number after the letter: Rotation of the middle housing in relation to the upper housing;
second number after the letter: Rotation of the lower housing in relation to the upper housing;
for more information see page 192.

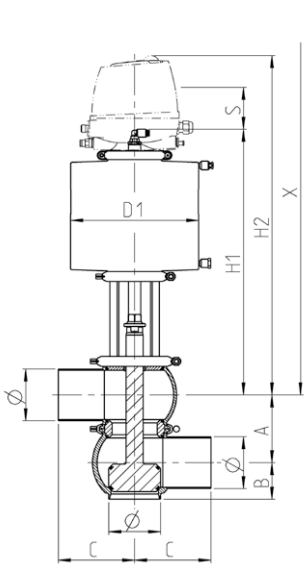
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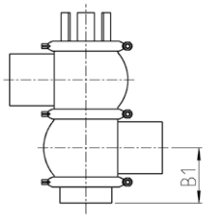
Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	W		R	-	/	-	S		-		-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

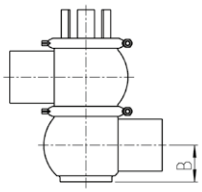
VARIVENT® Type W_V
Single-seat Long-stroke Valve







Loose seat ring



Fixed vertical port

Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6.4 bar (93 psi)
Product pressure	DN 65 – DN 80, OD 2 ½" – OD 3": 10 bar (145 psi)
	DN 100, OD 4": 5.2 bar (75 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring or fixed vertical port
Marking / Certificates	CE FDA

	Pipe			Housing	Actuator	Dimensions				Valve
Nominal width	Ø [mm]	A [mm]	B [mm]	B1 [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 65	70.0 × 2.00	96.0	52	83.0	125	210	421	550	835	50.0	26
DN 80	85.0 × 2.00	111.0	60	90.5	125	210	429	558	843	50.0	28
DN 100	104.0 × 2.00	130.0	70	100.0	125	210	438	567	852	55.0	34
OD 2 ½"	63.5 × 1.65	90.0	54	80.0	125	210	425	554	839	44.0	26
OD 3"	76.2 × 1.65	103.0	54	86.5	125	210	432	561	846	42.0	27
OD 4"	101.6 × 2.11	127.5	69	99.0	125	210	440	569	854	52.5	34

Position	Description of the order code for the standard version													
1	**Valve type**													
	W	VARIVENT® divert valve												
2	**Housing combinations**													
	K	V	P	O	W	Y	X	Z	U	M	N	G		
														
3	**Supplement to the valve type**													
	V	Long-stroke												
4/5	**Nominal width (upper housing/lower housing)**													
	DN 65	OD 2 ½"												
	DN 80	OD 3"												
	DN 100	OD 4"												
6	**Actuator type**													
	L	Air/Spring, long stroke												
7	**Non-actuated position**													
	Z	Spring-to-close (NC)												
	A	Spring-to-open (NO)												
8	**Standard configuration with 6.4 bar air supply pressure for 10 bar (DN 65 – DN 80, OD 2 ½" – OD 3") or 5.2 bar (DN 100, OD 4") product pressure**													
	Actuator (spring-to-close)		Actuator (spring-to-open)											
	ZEF/V		ZEF/V											
9	**Valve seat version**		Housing combination											
			K	V	P	O	W	Y	X	Z	U	M	N	G
	L00	Loose seat ring / Clamp connection	•	•	•	•	•	•	•	•	•	•	•	•
	V00	Fixed vertical port	•	•	•	•								
10	**Seal material in contact with the product**													
	1	EPDM (FDA)												
	2	FKM (FDA)												
	3	HNBR (FDA); (up to DN 80, OD 3")												
11	**Surface quality of the housing**													
	2	Inside R_a ≤ 0.8 µm, outside matt blasted (DN, OD)												
12	**Connection fittings**													
	N	Welding end												
13	**Accessories**													
	/52	Adhesive ID tag												
+														
14–19	**Air connection / Control and feedback system**													
	00000M	Metric for air hose Ø 6/4 mm												
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)												
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation												

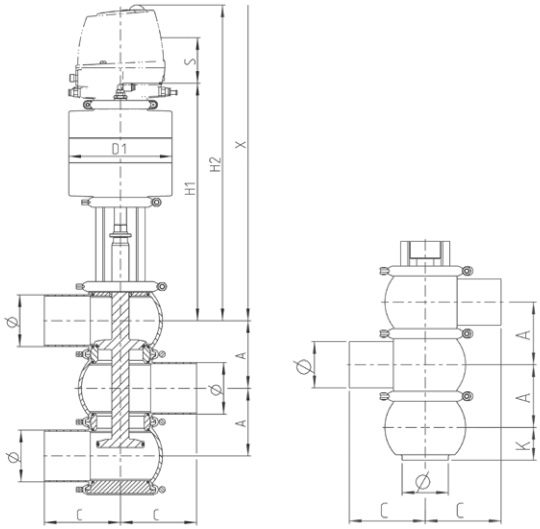
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	W		V	-	/	-	L		-	ZEF/V	-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type X
Single-seat Valve





Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring
Marking / Certificates	CE FDA

	Pipe		Housing	Actuator				Dimensions		Valve
Nominal width	Ø [mm]	A [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	P [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	50.0	90.0	99	294	423	200	508	8	9
DN 40	41.0 × 1.50	62.0	90.0	110	335	464	200	549	13	13
DN 50	53.0 × 1.50	74.0	90.0	110	341	470	200	555	14	14
DN 65	70.0 × 2.00	96.0	125.0	135	382	511	230	656	25	24
DN 80	85.0 × 2.00	111.0	125.0	135	390	519	230	664	25	25
DN 100	104.0 × 2.00	130.0	125.0	170	399	528	250	673	25	34
DN 125	129.0 × 2.00	155.0	150.0	260	555	684	300	884	55	65
DN 150	154.0 × 2.00	180.0	150.0	260	708	837	300	1,037	55	82
OD 1"	25.4 × 1.65	46.0	90.0	99	292	421	200	506	7	9
OD 1 ½"	38.1 × 1.65	59.0	90.0	110	337	466	200	551	16	13
OD 2"	50.8 × 1.65	71.5	90.0	110	343	472	200	557	16	13
OD 2 ½"	63.5 × 1.65	90.0	125.0	135	386	515	230	660	25	23
OD 3"	76.2 × 1.65	103.0	125.0	135	393	522	230	667	18	24
OD 4"	101.6 × 2.11	127.5	125.0	170	401	530	250	675	27	33
OD 6"	152.4 × 2.77	177.0	150.0	260	707	836	300	1,036	55	82
IPS 2"	60.3 × 2.00	81.0	114.3	110	338	467	200	552	20	14
IPS 3"	88.9 × 2.30	115.0	152.5	135	388	517	230	662	21	25
IPS 4"	114.3 × 2.30	140.0	152.5	170	394	523	250	668	25	35
IPS 6"	168.3 × 2.77	192.0	152.5	260	702	831	300	1,031	55	84

Position	Description of the order code for the standard version			
1	**Valve type**			
	X	VARIVENT® divert valve		
2	**Housing combinations**			
	W	Y	X	Z
				
	U	M	N	G
				
3	**Supplement to the valve type**			
	Reserved for options			
4/5	**Nominal width (upper housing/lower housing)**			
	DN 25	OD 1"		
	DN 40	OD 1 ½"		
	DN 50	OD 2"	IPS 2"	
	DN 65	OD 2 ½"		
	DN 80	OD 3"	IPS 3"	
	DN 100	OD 4"	IPS 4"	
	DN 125			
	DN 150	OD 6"	IPS 6"	
6	**Actuator type**			
	S	Air / Spring		
7	**Non-actuated position**			
	Z	Spring-to-close (NC)		
	A	Spring-to-open (NO)		
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**			
	Actuator (spring-to-close)		Actuator (spring-to-open)	For nominal widths
	AA		AA	DN 25, OD 1"
	CB		CB	DN 40, DN 50, OD 1 ½", OD 2", IPS 2"
	DD		DD	DN 65, DN 80, OD 2 ½", OD 3", IPS 3"
	EF		EF	DN 100, OD 4", IPS 4"
	SH6		SH6	DN 125
	TK6		TK6	DN 150, OD 6", IPS 6"
9	**Valve seat version**			
	L00	Loose seat ring / Clamp connection		
10	**Seal material in contact with the product**			
	1	EPDM (FDA)		
	2	FKM (FDA)		
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")		
11	**Surface quality of the housing**			
	2	Inside $R_a \leq 0.8$ µm, outside matt blasted		
12	**Connection fittings**			
	N	Welding end		
13	**Accessories**			
	/52	Adhesive ID tag		
+				
14–19	**Air connection / Control and feedback system**			
	00000M	Metric for air hose Ø 6/4 mm		
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)		
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation		

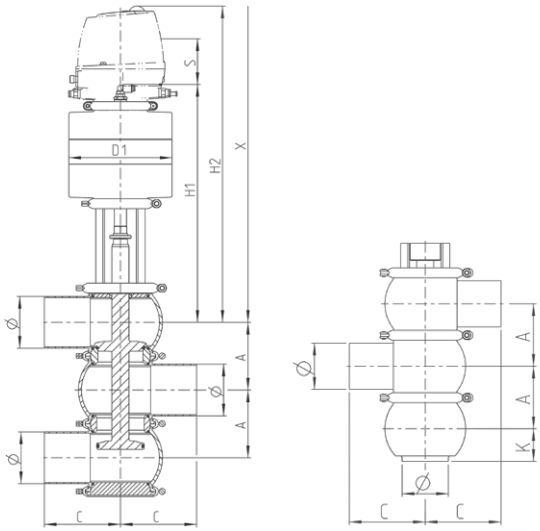
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	X			-	/	-	S		-		-	L00	-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type X_R
Radial Sealing Single-seat Valve





Technical data of the standard version	
Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring
Marking / Certificates	CE FDA

	Pipe	Housing		Actuator	Dimensions			Valve	
Nominal width	Ø [mm]	A [mm]	C [mm]	K [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	50.0	90.0	31.0	99	294	423	508	8	9
DN 40	41.0 × 1.50	62.0	90.0	39.0	110	335	464	549	13	13
DN 50	53.0 × 1.50	74.0	90.0	41.0	110	341	470	555	14	14
DN 65	70.0 × 2.00	96.0	125.0	52.0	135	382	511	656	25	24
DN 80	85.0 × 2.00	111.0	125.0	60.0	135	390	519	664	25	25
DN 100	104.0 × 2.00	130.0	125.0	70.0	170	399	528	673	25	34
OD 1"	25.4 × 1.65	46.0	90.0	29.0	99	292	421	506	7	9
OD 1 ½"	38.1 × 1.65	59.0	90.0	39.0	110	337	466	551	16	13
OD 2"	50.8 × 1.65	71.5	90.0	38.7	110	343	472	557	16	13
OD 2 ½"	63.5 × 1.65	90.0	125.0	54.0	135	386	515	660	25	23
OD 3"	76.2 × 1.65	103.0	125.0	54.0	135	393	522	667	18	24
OD 4"	101.6 × 2.11	127.5	125.0	69.0	170	401	530	675	27	33

Position	Description of the order code for the standard version									
1	**Valve type**									
	X	VARIVENT® divert valve								
2	**Housing combinations**									
	K	P	W	Y	X	Z	U	M	N	G
										
3	**Supplement to the valve type**									
	R	Radial Sealing								
4/5	**Nominal width (upper housing/lower housing)**									
	DN 25	OD 1"								
	DN 40	OD 1 ½"								
	DN 50	OD 2"								
	DN 65	OD 2 ½"								
	DN 80	OD 3"								
	DN 100	OD 4"								
6	**Actuator type**									
	S	Air / Spring								
7	**Non-actuated position**									
	Z	Spring-to-close (NC)								
	A	Spring-to-open (NO)								
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**									
	Actuator (spring-to-close)		Actuator (spring-to-open)		For nominal widths					
	AA		AA		DN 25, OD 1"					
	CB		CB		DN 40, DN 50, OD 1 ½", OD 2"					
	DD		DD		DN 65, DN 80, OD 2 ½", OD 3"					
	EF		EF		DN 100, OD 4"					
9	**Valve seat version***		Housing combination							
			W	Y	X	Z	U	M	N	G
	L00	Loose seat ring / Clamp connection	•	•	•	•	•	•	•	•
	V00	Welded seat ring / Port orientation 0° or fixed vertical port	•	•	•	•	•	•	•	•
	V10	Welded seat ring / Port orientation 90°	•	•	•	•	•	•	•	•
	V20	Welded seat ring / Port orientation 180°	•	•						
10	**Seal material in contact with the product**									
	1	EPDM (FDA)								
	2	FKM (FDA)								
	3	HNBR (FDA)								
11	**Surface quality of the housing**									
	2	Inside R_a ≤ 0.8 µm, outside matt blasted								
12	**Connection fittings**									
	N	Welding end								
13	**Accessories**									
	/52	Adhesive ID tag								
+										
14–19	**Air connection / Control and feedback system**									
	00000M	Metric for air hose Ø 6/4 mm								
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)								
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation								

* First number after the letter: Rotation of the middle housing in relation to the upper housing;
second number after the letter: Rotation of the lower housing in relation to the upper housing;
for more information see page 192.

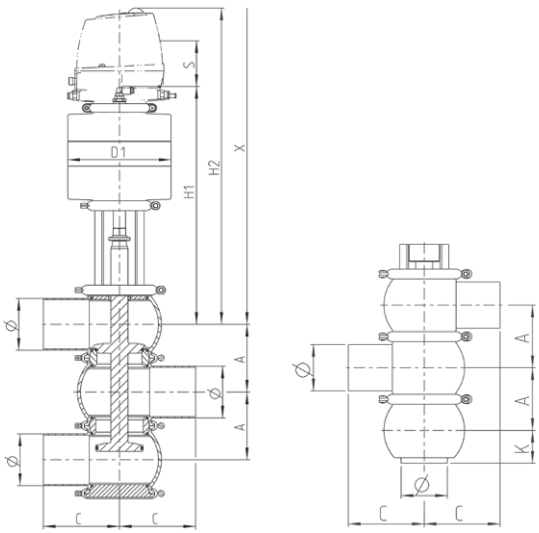
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	X		R	-	/	-	S		-		-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type X_V
Single-seat Long-stroke Valve





Technical data of the standard version	
Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	OD 2 ½"– OD 3": 4.8 bar (70 psi)
	OD 4": 6.3 bar (91 psi)
Product pressure	OD 2 ½"– OD 3": 5 bar (73 psi)
	OD 4": 5.2 bar (75 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring
Marking / Certificates	CE FDA

	Pipe	Housing		Actuator	Dimensions				Valve	
Nominal width	Ø [mm]	A [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	P [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
OD 2 ½"	63.5 × 1.65	90.0	125	170	402	531	240	675	35	24
OD 3"	76.2 × 1.65	103.0	125	170	409	538	240	683	35	24
OD 4"	101.6 × 2.11	127.5	125	210	439	568	280	713	55	36

Position	Description of the order code for the standard version		
1	**Valve type**		
	X	VARIVENT® divert valve	
2	**Housing combinations**		
	W Y X Z U M N G 		
3	**Supplement to the valve type**		
	V	Long-stroke	
4/5	**Nominal width (upper housing/lower housing)**		
	OD 2 ½"		
	OD 3"		
	OD 4"		
6	**Actuator type**		
	S	Air / Spring	
7	**Non-actuated position**		
	Z	Spring-to-close (NC)	
	A	Spring-to-open (NO)	
8	**Standard configuration with 4.8 bar air supply pressure for 5 bar product pressure (OD 2 ½" – OD 3") or with 6.3 bar air supply pressure for 5.2 bar product pressure (OD 4")**		
	Actuator (spring-to-close)	Actuator (spring-to-open)	For nominal widths
	DD5	DD5	OD 2 ½", OD 3"
	ZEF/V	ZEF/V	OD 4"
9	**Valve seat version**		
	L00	Loose seat ring / Clamp connection	
10	**Seal material in contact with the product**		
	1	EPDM (FDA)	
	2	FKM (FDA)	
	3	HNBR (FDA)	
11	**Surface quality of the housing**		
	2	Inside R_a ≤ 0.8 µm, outside matt blasted	
12	**Connection fittings**		
	N	Welding end	
13	**Accessories**		
	/52	Adhesive ID tag	
+			
14–19	**Air connection / Control and feedback system**		
	00000M	Metric for air hose Ø 6/4 mm	
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)	
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation	

The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	X		V	-	/	-	S		-		-	L00	-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

3 MIXPROOF SHUT-OFF VALVES FOR PRODUCT APPLICATIONS

VARIVENT® Hygienic Seat Valves

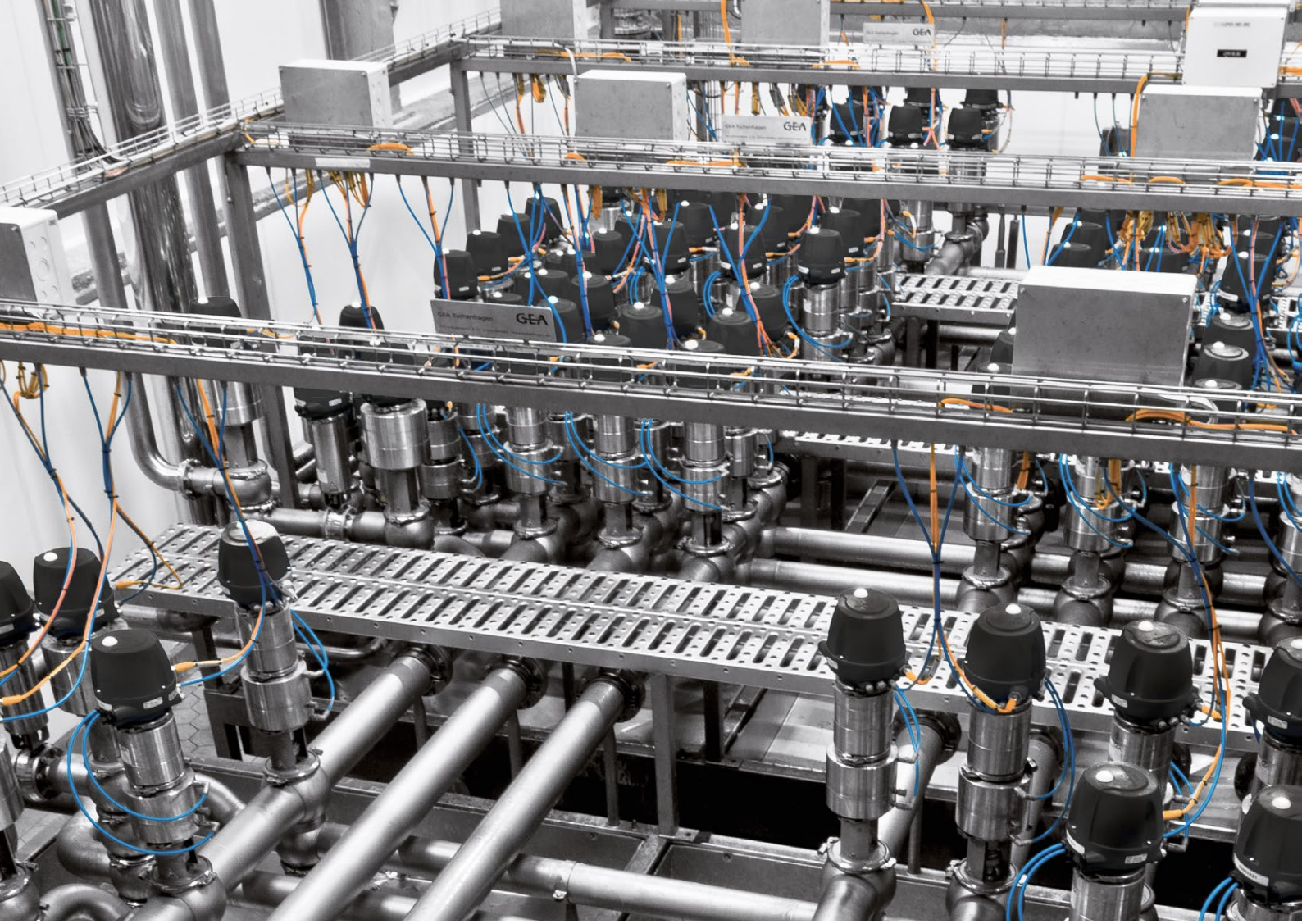


Overview of Double-seat Valves

VARIVENT® double-seat valves are used for mixproof shut-off of incompatible products at the pipe junctions.

Special features
Certified, hygienic configuration
Metallic stop
Flexibility because of the modular principle
Proven seal geometry
Mixproof separation
Availability of different valve configurations
Optional spray cleaning connection for cleaning the leakage chamber
Optional separate lifting actuator to lift both valve discs for cleaning the leakage chamber and valve discs seals





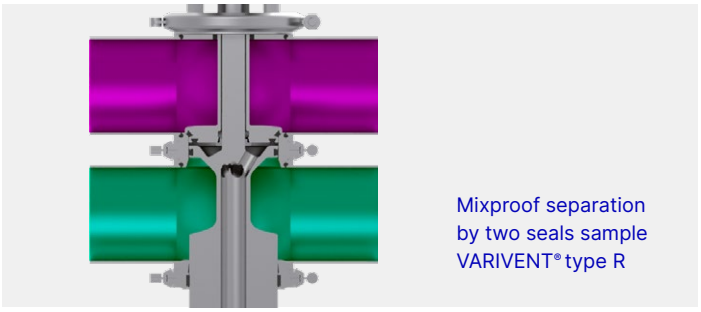
Overview of Double-seat Valves

Function of the valve
When the valve is closed (non-actuated position), there are two seals between the separated pipelines. If one seal is defective, the resulting leakage will be directed through the leakage outlet into the periphery, without mixing with the product in the second pipeline.

This method enables that there is no mixing between the products from two pipelines.

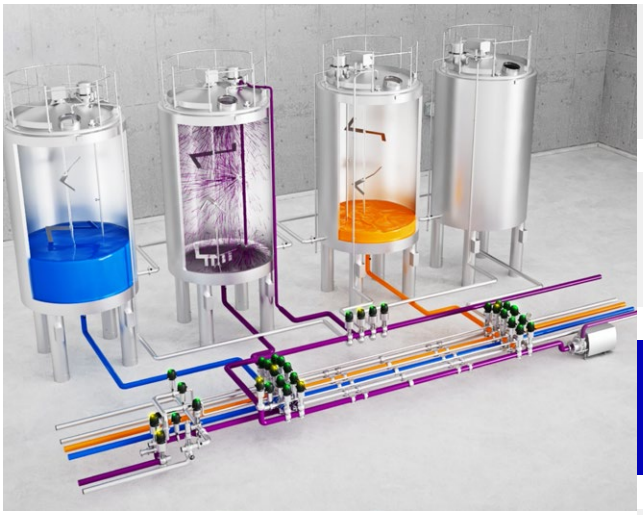
Next level safety
The optimized physical design of the leakage cavity of the valve types MX, PMO M/2.0 and PMO Cheese Curd M_C/2.0 creates a negative pressure. Should a seal fail or even with no seals, the product is removed by vacuum and guided to the periphery without the risk of contamination (Venturi effect).

This method prevents incompatible media from mixing under all conceivable conditions and thus to meet the highest safety requirements.



Mixproof separation by two seals sample VARIVENT® type R





Application examples

To accommodate the different requirements of various industries, applications and processes, we have a variety of mixproof shut-off valves in our portfolio. The selection matrix provides an overview of all the options.

Sizes

Double-seat valves type D and R	Double-seat valve type B	Double-seat long-stroke valves	Double-seat valve type MX	VARIVENT® 24/7 PMO Valve 2.0	VARIVENT® 24/7 Cheese Curd Valve 2.0
DN 25 – DN 150	DN 65 – DN 150		DN 40 – DN 150		
OD 1" – OD 6"	OD 2 ½" – OD 6"	OD 3" – OD 4"	OD 1.5" – OD 6"	OD 1" – OD 6"	OD 2" – OD 4"
IPS2" – IPS 6"	IPS 2" – IPS 6"				

Variety of types

The different variants of the VARIVENT® double-seat valve make it possible to select valves that are optimally adapted to the process.

The axial sealing valve types D and B entail a small switching leakage during each switching procedure, but they notably have a very long service life with the axial seals. The radial sealing valve types R, MX, PMO M/2.0 and PMO Cheese Curd M_C/2.0 offer the advantage of switching nearly without any switching leakage.

Valve types B and R are additionally characterized by a balancer in the lower valve housing. This enables the valve to reliably remain in the closed position even if there are water hammers in the lower pipeline. The valve types MX, PMO M/2.0 and PMO Cheese Curd M_C/2.0 have a balancer on both the (upper) double disc and the (lower) valve disc.

The valve types PMO M/2.0 and PMO Cheese Curd M_C/2.0 are subject to the regulations of the Pasteurized Milk Ordinance (PMO) and are used in all non-aseptic process areas, e.g. milk reception, raw milk storage tanks and distribution systems, pasteurizer supply and return as well as bottling lines.

Switching leakage

In axial sealing double-seat valves, with every switching procedure there is a short time during which the lower valve disc is neither in contact with the middle seal of the upper valve disc, nor has it reached the axial seat surface of the seat ring. During this brief moment liquid can percolate through the resulting gap into the leakage chamber and flow out into the atmosphere. This is referred to as the switching leakage.

In radial sealing double-seat valves, this gap does not occur during the switching procedure, which means the switching leakage is reduced to a minimum (possibility of product residues adhering to the metallic surfaces).

Overview of Double-seat Valves

Water hammer safety
If there is a water hammer in the lower pipeline, the force of the water hammer acts on the lower valve disc and could exceed the locking force of the actuator spring.

This gives rise to the danger of the lower valve disc being lifted by the pressure in the pipeline.

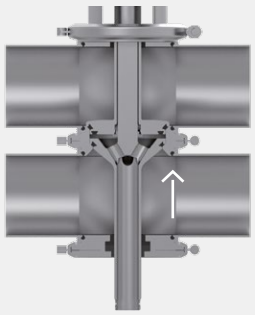
In axial sealing double-seat valves, this would result in a connection to the atmosphere, leading to a leak (see switching leakage). The connection to the atmosphere would also cause a sudden reduction in the excess pressure in the pipeline. Then the actuator spring would close the valve again.

Valve type B with a lower balancer is available to prevent the lower valve disc from lifting during a water hammer in the lower pipeline. With its downward-facing compensation surface, the balancer adjusts out the operating direction of the pressure and prevents movement of the lower valve disc up to a particular excess pressure.

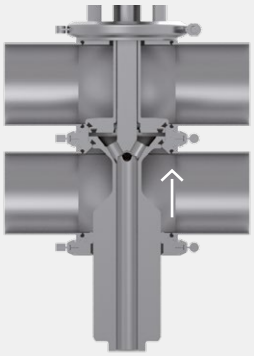
Radial sealing double-seat valve type R is always equipped with this lower balancer to prevent the opening movement of the lower valve disc.

Radial sealing double-seat valves VARIVENT® Valve type MX, VARIVENT® 24/7 PMO Valve type M/2.0 and VARIVENT® 24/7 Cheese Curd Valve type M_C/2.0 have a balancer on both the (upper) double disc and the (lower) valve disc. Thanks to those specially shaped balancers in both pipelines, the valves retain their full ability to act even in the case of a hydraulic lock or thermal expansion of the medium.

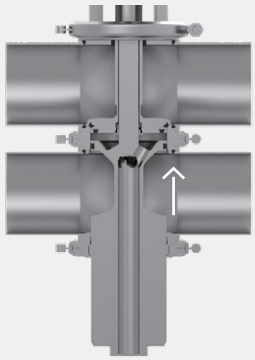
Recommended flow direction
To avoid water hammers when closing the valve while the product is flowing, mixproof shut-off valves should be switched against the flow direction of the product.



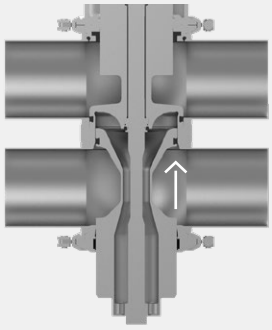
Valve type D



Valve type B



Valve type R



Valve type MX

Overview of Double-seat Valves

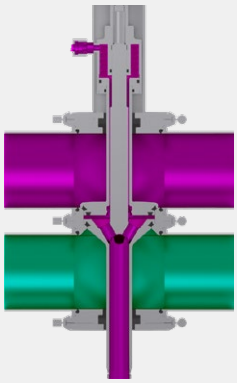
Cleaning the leakage chamber
The VARIVENT® modular system offers double-seat valves with several cleaning options allowing selecting the optimal solution depending on the used media.

Spray cleaning
This kind of leakage chamber cleaning is typically used for fluid media which are easily flushable and do not stick to the seal surfaces or possibly crystallize. All systems related to the cleaning of the valve should regularly be used to ensure an optimal cleaning result and to prevent damages of the valve.

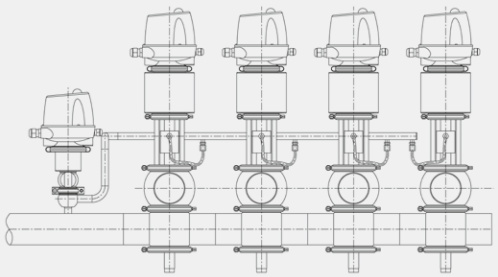
An integrated spray nozzle in the double seat distributes the cleaning medium through the double disc into the leakage chamber. The cleaning medium is supplied via an external cleaning connection located at the height of the lantern. It flows unpressurised through the leakage outlet into the periphery. Cleaning is carried out when the valve is in closed position. Therefore, the leakage chamber can be cleaned independently of pipe cleaning. Product can flow in both pipes during spray cleaning. Intermediate flushing is possible before or after switching the valve. As the valve is in closed position for spray cleaning, the sealing surfaces in contact with the seat ring are not rinsed during cleaning.

Necessary periphery for spray cleaning
As spray cleaning requires external supply of cleaning media via the external cleaning connection located at the height of the lantern, feed valves in the periphery are necessary to channel cleaning media to the cleaning connection on time.

Feed valves with a relatively small nominal diameter are used on the pipe that carries the cleaning medium. Each feed valve usually supplies several cleaning connections of double-seat valves. All connected double-seat valves must be adequately supplied with cleaning medium during cleaning.



Spray cleaning in the double-seat valve



Application example of a feed valve

Lifting actuator

This kind of leakage chamber cleaning is typically used for sensitive media which also require cleaning of the seal surfaces to rinse possible adhering microorganisms. It can also be used for adhering and crystalizing media.

The lifting actuator allows separate lifting of each valve disc. The leakage chamber is cleaned during pipe cleaning via lifting the upper or lower valve disc. Cleaning medium passes the seal of the lifted valve disc, cleans the leakage chamber, and flows unpressurized through the leakage outlet into the periphery. As such, all surfaces in contact with the cleaning medium are rinsed, including the surfaces of the valve disc seals. Cleaning is only possible during pipe cleaning.

Double discs (upper valve discs) are always lifted upwards whereas valve discs (lower valve discs) are lifted upwards or downwards depending on the sealing: Axial sealing valve discs are lifted upwards, radial sealing valve discs are lifted downwards.

Lifting actuator and spray cleaning

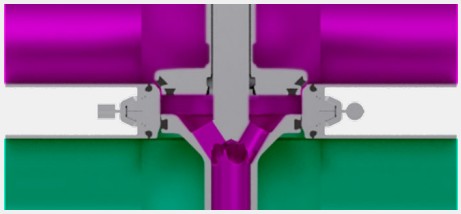
This kind of cleaning is typically used for critical media which are highly adhesive, easily crystallize and are sticky (e.g., sugar solutions) or viscous (e.g., yoghurt).

The lifting actuator allows cleaning the leakage chamber and valve discs seals during pipe cleaning whereas spray cleaning allows intermediate cleaning of the leakage chamber during production. Short intermediate cleaning is often done after each switching process.

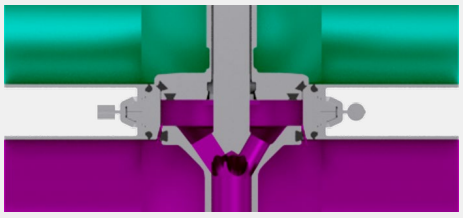
Divisible lift actuator

This kind of leakage chamber cleaning is typically used for valves in CIP supply and CIP return pipes.

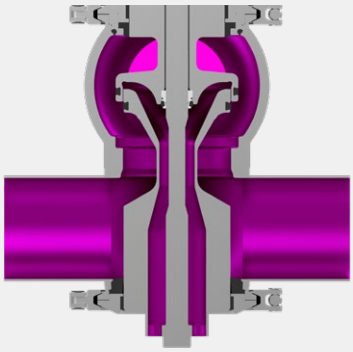
When the valve is in the open position, the divisible lift actuator allows the upper valve disc to be lifted upwards. Cleaning medium passes all surfaces and seals of both valve discs, cleans the leakage chamber, and flows unpressurized through the leakage outlet into the periphery. All wetted parts can be cleaned at the same time.



If there is cleaning media in the upper pipeline, the upper valve disc can be lifted to allow the surface of the seal and the leakage chamber to be cleaned.



In the radial sealed double-seat valves type R and MX, the lower valve disc opens downward.



The valve is in the open position and cleaning medium flows from one pipeline to the other. When both pipelines are flooded with cleaning medium, the upper valve disc is lifted upwards allowing cleaning of all wetted parts in one process step.

Selection Matrix

Mixproof shut-off valves

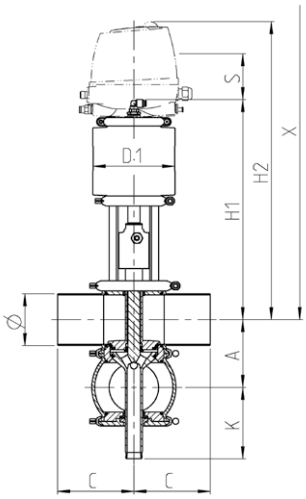
Product range

Valves for the U.S. dairy market according to PMO directives


Axial/axial sealing (switching leakage)
VARIVENT® double-seat valve type D
With seat lifting
VARIVENT® double-seat valve type D_L, D_C
Axial/axial sealing (switching leakage)
Viscous products or products with large particles
VARIVENT® double-seat long-stroke valve type D_/ V
With seat lifting
VARIVENT® double-seat long-stroke valve type D_L/V, D_C/V
Axial/axial sealing (switching leakage)
Water hammer safety, single balanced
VARIVENT® double-seat valve with balancer type B
With seat lifting
VARIVENT® double-seat valve with balancer type B_L, B_C
Axial/radial sealing
Water hammer safety, single balanced
VARIVENT® radial sealing double-seat valve type R
With seat lifting
VARIVENT® radial sealing double-seat valve type R_L, R_C
Radial/radial sealing
Water hammer safety, double balanced with seat lifting
VARIVENT® radial sealing double-seat valve type MX
Radial/radial sealing
Water hammer safety, double balanced with seat lifting
VARIVENT® 24/7 PMO valve type M_O/2.0
Cheese curd products
VARIVENT® 24/7 cheese curd valve type M_C/2.0
Water hammer safety, double balanced, with divisible lifting for CIP supply and CIP return pipes
VARIVENT® 24/7 PMO valve with divisable actuator type M_S/2.0

VARIVENT® Type D
Double-seat Valve





Technical data of the standard version

Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped or welded seat ring
Marking / Certificates	CE FDA

	Pipe		Housing		Actuator	Spray cleaning hose (PTFE)	Dimensions			Valve	
Nominal width	Ø [mm]	A [mm]	C [mm]	K [mm]	D1 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	50.0	90.0	81	99	6/4	294	423	648	22.0	8
DN 40	41.0 × 1.50	62.0	90.0	93	110	8/6	335	464	689	22.0	11
DN 50	53.0 × 1.50	74.0	90.0	99	110	8/6	341	470	695	30.0	12
DN 65	70.0 × 2.00	96.0	125.0	125	135	8/6	352	481	831	30.0	18
DN 80	85.0 × 2.00	111.0	125.0	117	135	8/6	360	489	839	30.0	19
DN 100	104.0 × 2.00	130.0	125.0	137	170	8/6	399	528	878	30.0	27
DN 125	129.0 × 2.00	155.0	150.0	171	260	10/8	555	684	1,174	60.0	58
DN 150	154.0 × 2.00	180.0	150.0	196	260	10/8	579	708	1,198	60.0	66
OD 1"	25.4 × 1.65	46.0	90.0	83	99	6/4	292	421	646	18.0	8
OD 1 ½"	38.1 × 1.65	59.0	90.0	94	110	8/6	337	466	691	22.0	11
OD 2"	50.8 × 1.65	71.5	90.0	100	110	8/6	343	472	697	30.5	11
OD 2 ½"	63.5 × 1.65	90.0	125.0	128	135	8/6	356	485	835	31.0	18
OD 3"	76.2 × 1.65	103.0	125.0	121	135	8/6	363	492	842	29.0	18
OD 4"	101.6 × 2.11	127.5	125.0	138	170	8/6	401	530	880	30.5	27
OD 6"	152.4 × 2.77	177.0	150.0	197	260	10/8	578	707	1197	60.0	67
IPS 2"	60.3 × 2.00	81.0	114.3	95	110	8/6	338	467	692	30.0	12
IPS 3"	88.9 × 2.30	115.0	152.5	115	135	8/6	358	487	837	30.0	19
IPS 4"	114.3 × 2.30	140.0	152.5	132	170	8/6	394	523	873	30.0	28
IPS 6"	168.3 × 2.77	192.0	152.5	190	260	10/8	573	702	1,192	60.0	68

Please note: A 10–100 mm clearance below the leakage outlet is required with this valve type.

Position	Description of the order code for the standard version		
1	**Valve type**		
	D	VARIVENT® double-seat valve	
2	**Housing combinations**		
	A 	B 	C  E 
3	**Supplement to the valve type**		
	Reserved for options		
4/5	**Nominal width (upper housing/lower housing)**		
	DN 25	OD 1"	
	DN 40	OD 1 ½"	
	DN 50	OD 2"	IPS 2"
	DN 65	OD 2 ½"	
	DN 80	OD 3"	IPS 3"
	DN 100	OD 4"	IPS 4"
	DN 125		
	DN 150	OD 6"	IPS 6"
6	**Actuator type**		
	S	Air / Spring	
7	**Non-actuated position**		
	Z	Spring-to-close (NC)	
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**		
	Actuator (spring-to-close)	For nominal widths	
	AA	DN 25, OD 1"	
	BB	DN 40, DN 50, OD 1 ½", OD 2", IPS 2"	
	CD	DN 65, DN 80, OD 2 ½", OD 3", IPS 3"	
	DF	DN 100, OD 4", IPS 4"	
	SH6	DN 125	
	SK6	DN 150, OD 6", IPS 6"	

9	Valve seat version		Housing combination			
			A	B	C	E
	L0	Loose seat ring / Clamp connection	•	•	•	•
	V0	Welded seat ring / Port orientation 0°	•	•	•	•
	V1	Welded seat ring / Port orientation 90°	•	•	•	•
	V2	Welded seat ring / Port orientation 180°		•		
	V3	Welded seat ring / Port orientation 270°		•		

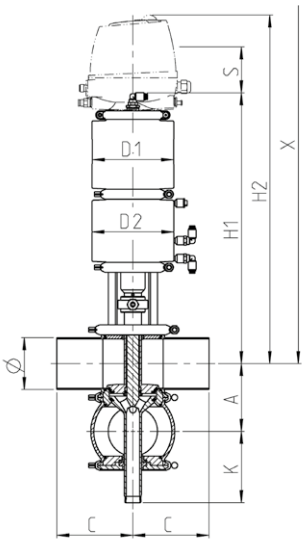
10	**Seal material in contact with the product**		
	1	EPDM (FDA)	
	2	FKM (FDA)	
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")	
11	**Surface quality of the housing**		
	2	Inside R_a ≤ 0.8 µm, outside matt blasted	
12	**Connection fittings**		
	N	Welding end	
13	**Accessories**		
	/52	Adhesive ID tag	
+			
14–19	**Air connection / Control and feedback system**		
	00000M	Metric for air hose Ø 6/4 mm	
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)	
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation	

The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	D			-	/	-	S	Z	-		-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type D_L, D_C Double-seat Valve with Lifting Actuator





Technical data of the standard version

Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Valve seat version	Clamped or welded seat ring
Marking / Certificates	CE FDA

	Pipe			Housing		Actuator	Spray cleaning hose (PTFE)			Dimensions		Valve	
Nominal width	Ø [mm]	A [mm]	C [mm]	K [mm]	D1 [mm]	D2 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Extension X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	50.0	90.0	81	110	110	6/4	412	541	766	22	14
DN 40	41.0 × 1.50	62.0	90.0	93	110	110	8/6	426	555	780	22	16
DN 50	53.0 × 1.50	74.0	90.0	99	110	110	8/6	424	553	778	30	16
DN 65	70.0 × 2.00	96.0	125.0	125	135	135	8/6	435	564	914	30	23
DN 80	85.0 × 2.00	111.0	125.0	117	135	135	8/6	443	572	922	30	24
DN 100	104.0 × 2.00	130.0	125.0	137	170	170	8/6	482	611	961	30	34
DN 125	129.0 × 2.00	155.0	150.0	171	260	210	10/8	663	792	1,282	60	72
DN 150	154.0 × 2.00	180.0	150.0	196	260	210	10/8	687	816	1,306	60	85
OD 1"	25.4 × 1.65	46.0	90.0	83	110	110	6/4	414	543	768	18	14
OD 1 ½"	38.1 × 1.65	59.0	90.0	94	110	110	8/6	428	557	782	22	16
OD 2"	50.8 × 1.65	71.5	90.0	100	110	110	8/6	425	554	779	30	16
OD 2 ½"	63.5 × 1.65	90.0	125.0	128	135	135	8/6	438	567	917	30	23
OD 3"	76.2 × 1.65	103.0	125.0	121	135	135	8/6	447	576	926	30	23
OD 4"	101.6 × 2.11	127.5	125.0	138	170	170	8/6	483	612	962	30	34
OD 6"	152.4 × 2.77	177.0	150.0	197	260	210	10/8	689	818	1,308	60	81
IPS 2"	60.3 × 2.00	81.0	114.3	95	110	110	8/6	421	550	775	30	17
IPS 3"	88.9 × 2.30	115.0	152.5	115	135	135	8/6	441	570	920	30	25
IPS 4"	114.3 × 2.30	140.0	152.5	132	170	170	8/6	477	606	956	30	35
IPS 6"	168.3 × 2.77	192.0	152.5	190	260	210	10/8	681	810	1,300	60	82

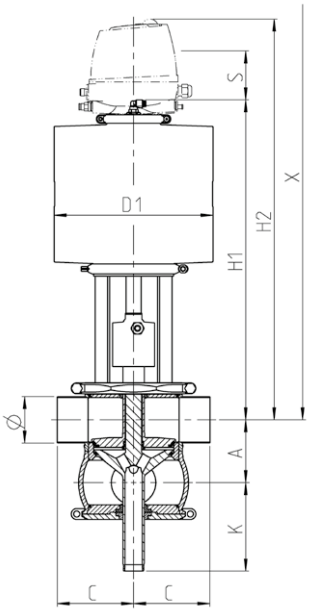
Position	Description of the order code for the standard version					
1	**Valve type**					
	D	VARIVENT® double-seat valve				
2	**Housing combinations**					
	A	B	C	E		
						
3	**Supplement to the valve type**					
	L	With lifting actuator and spray cleaning				
	C	With lifting actuator without spray cleaning				
4/5	**Nominal width (upper housing/lower housing)**					
	DN 25	OD 1"				
	DN 40	OD 1 ½"				
	DN 50	OD 2"	IPS 2"			
	DN 65	OD 2 ½"				
	DN 80	OD 3"	IPS 3"			
	DN 100	OD 4"	IPS 4"			
	DN 125					
	DN 150	OD 6"	IPS 6"			
6	**Actuator type**					
	S	Air / Spring				
7	**Non-actuated position**					
	Z	Spring-to-close (NC)				
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure**					
	Actuator (spring-to-close)	/ Lifting actuator			For nominal widths	
	BA	/ BLB			DN 25, OD 1"	
	BB	/ BLB			DN 40, DN 50, OD 1 ½", OD 2", IPS 2"	
	CD	/ CLB			DN 65, DN 80, OD 2 ½", OD 3", IPS 3"	
	DF	/ DLB			DN 100, OD 4", IPS 4"	
	SH6	/ EL6			DN 125	
	SK6	/ EL6			DN 150, OD 6", IPS 6"	
9	**Valve seat version**		Housing combination			
			A	B	C	E
	L0	Loose seat ring / Clamp connection	•	•	•	•
	V0	Welded seat ring / Port orientation 0°	•	•	•	•
	V1	Welded seat ring / Port orientation 90°	•	•	•	•
	V2	Welded seat ring / Port orientation 180°		•		
	V3	Welded seat ring / Port orientation 270°		•		
10	**Seal material in contact with the product**					
	1	EPDM (FDA)				
	2	FKM (FDA)				
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")				
11	**Surface quality of the housing**					
	2	Inside $R_a \leq 0.8$ µm, outside matt blasted				
12	**Connection fittings**					
	N	Welding end				
13	**Accessories**					
	/52	Adhesive ID tag				
+						
14–19	**Air connection / Control and feedback system**					
	00000M	Metric for air hose Ø 6/4 mm				
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)				
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation				

The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	D			-	/	-	S	Z	-		-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type D_/ V
Double-seat Long-stroke Valve





Technical data of the standard version	
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped or welded seat ring
Marking / Certificates	CE FDA

	Pipe			Housing	Actuator	Spray cleaning hose (PTFE)			Dimensions		Valve
Nominal width	Ø [mm]	A [mm]	C [mm]	K [mm]	D1 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
OD 3"	76.2 × 1.65	103.0	150	145	261	8/6	529	658	1,008	60	53
OD 4"	101.6 × 2.11	127.5	150	157	261	8/6	541	670	1,020	60	61

Please note: A 10–100 mm clearance below the leakage outlet is required with this valve type.

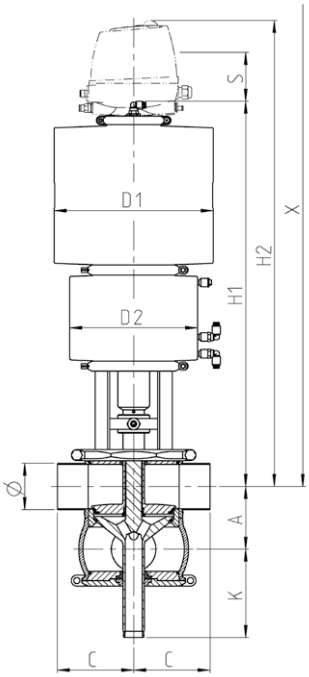
Position	Description of the order code for the standard version						
1	**Valve type**						
	D	VARIVENT® double-seat valve					
2	**Housing combinations**						
	A	B	C	E			
							
3	**Supplement to the valve type**						
	/V	Long-stroke					
4/5	**Nominal width (upper housing/lower housing)**						
	OD 3"						
	OD 4"						
6	**Actuator type**						
	S	Air / Spring					
7	**Non-actuated position**						
	Z	Spring-to-close (NC)					
8	**Standard configuration for maximum 5 bar product pressure with 6 bar air supply pressure**						
	Actuator (spring-to-close)	For nominal widths					
	SH6	OD 3"					
	SK6	OD 4"					
9	**Valve seat version**		Housing combination				
			A	B	C	E	
	V0	Welded seat ring / Port orientation 0°	•	•	•	•	
	V1	Welded seat ring / Port orientation 90°	•	•	•	•	
	V2	Welded seat ring / Port orientation 180°		•			
	V3	Welded seat ring / Port orientation 270°		•			
10	**Seal material in contact with the product**						
	1	EPDM (FDA)					
	2	FKM (FDA)					
11	**Surface quality of the housing**						
	1	Inside $R_a \leq 1.2$ µm, outside matt blasted (IPS)					
12	**Connection fittings**						
	N	Welding end					
13	**Accessories**						
	/52	Adhesive ID tag					
+							
14–19	**Air connection / Control and feedback system**						
	00000M	Metric for air hose Ø 6/4 mm					
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)					
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation					

The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	D		/V	-	/	-	S	Z	-		-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type D_L / V, D_C / V Double-seat Long-stroke Valve with Lifting Actuator





Technical data of the standard version	
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped or welded seat ring
Marking / Certificates	CE FDA

	Pipe	Housing			Actuator		Spray cleaning hose (PTFE)	Dimensions			Valve	
Nominal width	Ø [mm]	A [mm]	C [mm]	K [mm]	D1 [mm]	D2 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
OD 3"	76.2 × 1.65	103.0	125	145	260	210	8/6	637	766	1,116	60	67
OD 4"	101.6 × 2.11	127.5	150	157	260	210	8/6	649	778	1,128	60	75

Position	Description of the order code for the standard version					
1	**Valve type**					
	D	VARIVENT® double-seat valve				
2	**Housing combinations**					
	A	B	C	E		
						
3	**Supplement to the valve type**					
	L / V	Long stroke with lifting actuator and spray cleaning				
	C / V	Long stroke with lifting actuator without spray cleaning				
4/5	**Nominal width (upper housing/lower housing)**					
	OD 3"					
	OD 4"					
6	**Actuator type**					
	S	Air / Spring				
7	**Non-actuated position**					
	Z	Spring-to-close (NC)				
8	**Standard configuration for maximum 5 bar product pressure with 6 bar air supply pressure**					
	Actuator (spring-to-close)	/ Lifting actuator			For nominal widths	
	SH6	/ ELB			OD 3"	
	SK6	/ ELB			OD 4"	
9	**Valve seat version**		Housing combination			
			A	B	C	E
	V0	Welded seat ring / Port orientation 0°	•	•	•	•
	V1	Welded seat ring / Port orientation 90°	•	•	•	•
	V2	Welded seat ring / Port orientation 180°		•		
	V3	Welded seat ring / Port orientation 270°				
10	**Seal material in contact with the product**					
	1	EPDM (FDA)				
	2	FKM (FDA)				
11	**Surface quality of the housing**					
	2	Inside R_a ≤ 0.8 µm, outside matt blasted				
12	**Connection fittings**					
	N	Welding end				
13	**Accessories**					
	/52	Adhesive ID tag				
+						
14–19	**Air connection / Control and feedback system**					
	00000M	Metric for air hose Ø 6/4 mm				
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)				
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation				

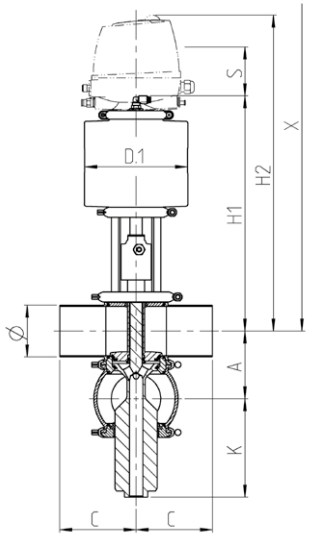
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	D			-	/	-	S	Z	-		-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type B
Double-seat Valve With Balancer





Technical data of the standard version

Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Water hammer safety	Up to 25 bar
Surface in contact with the product	$R_a \leq 0.8$ µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped or welded seat ring
Marking / Certificates	CE FDA

	Pipe		Housing		Actuator	Spray cleaning hose (PTFE)	Dimensions			Valve	
Nominal width	Ø [mm]	A [mm]	C [mm]	K [mm]	D1 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 65	70.0 × 2.00	96.0	125.0	125.0	170	8/6	382	511	916	30.0	24
DN 80	85.0 × 2.00	111.0	125.0	117.0	170	8/6	390	519	924	30.0	24
DN 100	104.0 × 2.00	130.0	125.0	137.0	210	8/6	399	528	933	30.0	32
DN 125	129.0 × 2.00	155.0	150.0	171.0	210	10/8	555	684	1,274	60.0	51
DN 150	154.0 × 2.00	180.0	150.0	275.0	260	10/8	579	708	1,298	60.0	65
OD 2 ½"	63.5 × 1.65	90.0	125.0	128.0	170	8/6	386	515	920	31.0	23
OD 3"	76.2 × 1.65	103.0	125.0	121.0	170	8/6	393	522	927	29.0	24
OD 4"	101.6 × 2.11	127.5	125.0	138.0	210	8/6	401	530	935	30.5	32
OD 6"	152.4 × 2.77	177.0	150.0	276.5	260	10/8	578	707	1,297	60.0	66
IPS 2"	60.3 × 2.00	81.0	114.3	95.0	110	8/6	345	474	734	30.0	13
IPS 3"	88.9 × 2.30	115.0	152.5	115.0	170	8/6	392	521	926	30.0	25
IPS 4"	114.3 × 2.30	140.0	152.5	132.0	210	8/6	404	533	938	30.0	33
IPS 6"	168.3 × 2.77	192.0	152.5	289.6	260	10/8	573	702	1,292	60.0	67

Please note: A 10–100 mm clearance below the leakage outlet is required with this valve type.

Position	Description of the order code for the standard version		
1	**Valve type**		
	B	VARIVENT® double-seat valve	
2	**Housing combinations**		
	A	B	C	E
				
3	**Supplement to the valve type**		
	Reserved for options		
4/5	**Nominal width (upper housing/lower housing)**		
			IPS 2"
	DN 65	OD 2 ½"	
	DN 80	OD 3"	IPS 3"
	DN 100	OD 4"	IPS 4"
	DN 125		
	DN 150	OD 6"	IPS 6"
6	**Actuator type**		
	S	Air / Spring	
7	**Non-actuated position**		
	Z	Spring-to-close (NC)	
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**		
	Actuator (spring-to-close)	For nominal widths	
	BB	IPS 2"	
	DD	DN 65, DN 80, OD 2 ½", OD 3", IPS 3"	
	EF	DN 100, OD 4", IPS 4"	
	EF6	DN 125	
	SG6	DN 150, OD 6", IPS 6"	
9	**Valve seat version**	Housing combination	
		A	B	C	E
	L0	Loose seat ring / Clamp connection	•	•	•	•
	V0	Welded seat ring / Port orientation 0°	•	•	•	•
	V1	Welded seat ring / Port orientation 90°	•	•	•	•
	V2	Welded seat ring / Port orientation 180°		•		
	V3	Welded seat ring / Port orientation 270°		•		
10	**Seal material in contact with the product**		
	1	EPDM (FDA)	
	2	FKM (FDA)	
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")	
11	**Surface quality of the housing**		
	2	Inside R_a ≤ 0.8 µm, outside matt blasted	
12	**Connection fittings**		
	N	Welding end	
13	**Accessories**		
	/52	Adhesive ID tag	
+			
14–19	**Air connection / Control and feedback system**		
	00000M	Metric for air hose Ø 6/4 mm	
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)	
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation	

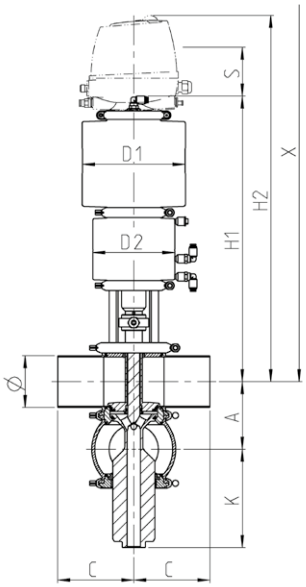
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	B			-	/	-	S	Z	-		-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type B_L, B_C Double-seat Valve with Balancer and Lifting Actuator





Technical data of the standard version	
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Water hammer safety	Up to 25 bar
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped or welded seat ring
Marking / Certificates	CE FDA

	Pipe		Housing		Actuator		Spray cleaning hose (PTFE)	Dimensions			Valve	
Nominal width	Ø [mm]	A [mm]	C [mm]	K [mm]	D1 [mm]	D2 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 65	70.0 × 2.00	96.0	125.0	154	170	135	8/6	465	594	999	30	29
DN 80	85.0 × 2.00	111.0	125.0	162	170	135	8/6	473	602	1,007	30	30
DN 100	104.0 × 2.00	130.0	125.0	162	210	170	8/6	482	611	1,016	30	39
DN 125	129.0 × 2.00	155.0	150.0	265	210	210	10/8	663	792	1,382	60	65
DN 150	154.0 × 2.00	180.0	150.0	275	260	210	10/8	687	816	1,406	60	84
OD 2 ½"	63.5 × 1.65	90.0	125.0	157	170	135	8/6	468	597	1,002	30	29
OD 3"	76.2 × 1.65	103.0	125.0	166	170	135	8/6	477	606	1,011	30	29
OD 4"	101.6 × 2.11	127.5	125.0	183	210	170	8/6	483	612	1,017	30	39
OD 6"	152.4 × 2.77	177.0	150.0	277	260	210	10/8	689	818	1,408	60	80
IPS 2"	60.3 × 2.00	81.0	114.3	131	110	110	8/6	428	557	817	30	18
IPS 3"	88.9 × 2.30	115.0	152.5	164	170	135	8/6	475	604	1,009	30	30
IPS 4"	114.3 × 2.30	140.0	152.5	187	210	170	8/6	487	616	1,021	30	41
IPS 6"	168.3 × 2.77	192.0	152.5	291	260	210	10/8	681	810	1,400	60	81

Position	Description of the order code for the standard version					
1	**Valve type**					
	B	VARIVENT® double-seat valve, with balancer				
2	**Housing combinations**					
	A	B	C	E		
						
3	**Supplement to the valve type**					
	L	With lifting actuator and spray cleaning				
	C	With lifting actuator without spray cleaning				
4/5	**Nominal width (upper housing/lower housing)**					
			IPS 2"			
	DN 65	OD 2 ½"				
	DN 80	OD 3"	IPS 3"			
	DN 100	OD 4"	IPS 4"			
	DN 125					
	DN 150	OD 6"	IPS 6"			
6	**Actuator type**					
	S	Air / Spring				
7	**Non-actuated position**					
	Z	Spring-to-close (NC)				
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**					
	Actuator (spring-to-close)	/ Lifting actuator			For nominal widths	
	BB	/ BLB			IPS 2"	
	DD	/ CLB			DN 65, DN 80, OD 2 ½", OD 3", IPS 3"	
	EF	/ DLB			DN 100, OD 4", IPS 4"	
	EF6	/ EL6			DN 125	
	SG6	/ EL6			DN 150, OD 6", IPS 6"	
9	**Valve seat version**		Housing combination			
			A	B	C	E
	L0	Loose seat ring / Clamp connection	•	•	•	•
	V0	Welded seat ring / Port orientation 0°	•	•	•	•
	V1	Welded seat ring / Port orientation 90°	•	•	•	•
	V2	Welded seat ring / Port orientation 180°		•		
	V3	Welded seat ring / Port orientation 270°		•		
10	**Seal material in contact with the product**					
	1	EPDM (FDA)				
	2	FKM (FDA)				
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")				
11	**Surface quality of the housing**					
	2	Inside R_a ≤ 0.8 µm, outside matt blasted				
12	**Connection fittings**					
	N	Welding end				
13	**Accessories**					
	/52	Adhesive ID tag				
+						
14–19	**Air connection / Control and feedback system**					
	00000M	Metric for air hose Ø 6/4 mm				
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)				
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation				

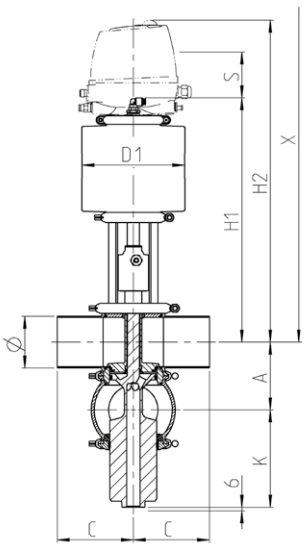
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	B			-	/	-	S	Z	-		-		-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type R
Radial Sealing Double-seat Valve





Technical data of the standard version

Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Water hammer safety	30 bar (DN 25 up to DN 50, OD 1" up to OD 2", IPS 2")
	50 bar (from DN 65, OD 2 ½", IPS 3")
Surface in contact with the product	$R_a \leq 0.8$ µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped or welded seat ring
Marking / Certificates	CE, EHEDG, FDA

	Pipe		Housing		Actuator	Spray cleaning hose (PTFE)	Dimensions			Valve	
Nominal width	Ø [mm]	A [mm]	C [mm]	K [mm]	D1 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	50.0	90.0	91.0	135	6/4	329	458	718	22	11
DN 40	41.0 × 1.50	62.0	90.0	129.5	135	8/6	338	467	727	25	14
DN 50	53.0 × 1.50	74.0	90.0	135.5	135	8/6	341	470	730	30	14
DN 65	70.0 × 2.00	96.0	125.0	164.5	170	8/6	382	511	916	30	24
DN 80	85.0 × 2.00	111.0	125.0	172.0	170	8/6	400	529	934	40	26
DN 100	104.0 × 2.00	130.0	125.0	192.5	170	8/6	409	538	943	40	29
DN 125	129.0 × 2.00	155.0	150.0	258.0	210	10/8	555	684	1,274	60	52
DN 150	154.0 × 2.00	180.0	150.0	272.5	210	10/8	661	790	1,380	60	64
OD 1"	25.4 × 1.65	46.0	90.0	93.0	135	6/4	327	456	716	18	11
OD 1 ½"	38.1 × 1.65	59.0	90.0	128.0	135	8/6	337	466	726	22	14
OD 2"	50.8 × 1.65	71.5	90.0	137.0	135	8/6	343	472	732	30	14
OD 2 ½"	63.5 × 1.65	90.0	125.0	167.5	170	8/6	386	515	920	31	24
OD 3"	76.2 × 1.65	103.0	125.0	176.0	170	8/6	403	532	937	39	25
OD 4"	101.6 × 2.11	127.5	125.0	194.0	170	8/6	411	540	945	40	31
OD 6"	152.4 × 2.77	177.0	150.0	274.0	210	10/8	660	789	1,379	60	65
IPS 2"	60.3 × 2.00	81.0	114.3	139.0	135	8/6	345	474	734	29	15
IPS 3"	88.9 × 2.30	115.0	152.5	174.0	170	8/6	402	531	936	40	26
IPS 4"	114.3 × 2.30	140.0	152.5	197.5	170	8/6	414	543	948	40	31
IPS 6"	168.3 × 2.77	192.0	152.5	278.5	210	10/8	655	784	1,374	60	66

Please note: A 10–100 mm clearance below the leakage outlet is required with this valve type.

Position	Description of the order code for the standard version					
1	**Valve type**					
	R	VARIVENT® double-seat valve, radial sealing				
2	**Housing combinations**					
	A 	B 	C 	E 		
3	**Supplement to the valve type**					
	Reserved for options					
4/5	**Nominal width (upper housing/lower housing)**					
	DN 25	OD 1"				
	DN 40	OD 1 ½"				
	DN 50	OD 2"	IPS 2"			
	DN 65	OD 2 ½"				
	DN 80	OD 3"	IPS 3"			
	DN 100	OD 4"	IPS 4"			
	DN 125					
	DN 150	OD 6"	IPS 6"			
6	**Actuator type**					
	S	Air / Spring				
7	**Non-actuated position**					
	Z	Spring-to-close (NC)				
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**					
	Actuator (spring-to-close)	For nominal widths				
	CD	DN 25, DN 40, DN 50, OD 1", OD 1 ½", OD 2", IPS 2"				
	DD	DN 65, OD 2 ½"				
	DD5	DN 80, DN 100, OD 3", OD 4", IPS 3", IPS 4"				
	EF6	DN 125				
	RF6	DN 150, OD 6", IPS 6"				
9	**Valve seat version**		Housing combination			
			A	B	C	E
	L0	Loose seat ring / Clamp connection	•	•	•	•
	V0	Welded seat ring / Port orientation 0°	•	•	•	•
	V1	Welded seat ring / Port orientation 90°	•	•	•	•
	V2	Welded seat ring / Port orientation 180°		•		
	V3	Welded seat ring / Port orientation 270°		•		
10	**Seal material in contact with the product**					
	1	EPDM (FDA)				
	2	FKM (FDA)				
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")				
11	**Surface quality of the housing**					
	2	Inside $R_a \leq 0.8$ µm, outside matt blasted				
12	**Connection fittings**					
	N	Welding end				
13	**Accessories**					
	/ 52	Adhesive ID tag (up to DN 50, OD 2", IPS 2")				
	/ 52 / 05	Adhesive ID tag (from DN 65, OD 2 ½", IPS 3")				
+						
14–19	**Air connection / Control and feedback system**					
	00000M	Metric for air hose Ø 6/4 mm				
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)				
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation				

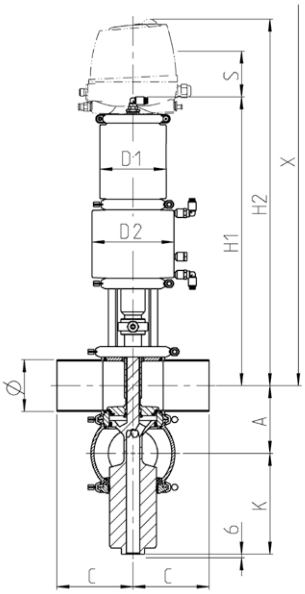
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	R			-	/	-	S	Z	-		-		-		2	N		+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type R_L, R_C Radial Sealing Double-seat Valve with Lifing Actuator





Technical data of the standard version

Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Water hammer safety	30 bar (DN 25 up to DN 50, OD 1" up to OD 2", IPS 2") 50 bar (from DN 65, OD 2 ½", IPS 3")
Surface in contact with the product	$R_a \leq 0.8$ µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped or welded seat ring
Marking / Certificates	CE, EHEDG, FDA

	Pipe			Housing		Actuator	Spray cleaning hose (PTFE)	Dimensions			Valve	
Nominal width	Ø [mm]	A [mm]	C [mm]	K [mm]	D1 [mm]	D2 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	50.0	90.0	91.0	110	110	6/4	412	541	801	25	14
DN 40	41.0 × 1.50	62.0	90.0	129.5	110	110	8/6	426	555	815	28	17
DN 50	53.0 × 1.50	74.0	90.0	135.5	110	110	8/6	424	553	813	31	17
DN 65	70.0 × 2.00	96.0	125.0	164.5	110	135	8/6	435	564	969	35	25
DN 80	85.0 × 2.00	111.0	125.0	172.0	110	135	8/6	473	602	1,007	45	26
DN 100	104.0 × 2.00	130.0	125.0	192.5	110	170	8/6	482	611	1,016	45	32
DN 125	129.0 × 2.00	155.0	150.0	258.0	170	210	10/8	616	745	1,335	65	59
DN 150	154.0 × 2.00	180.0	150.0	272.5	170	210	10/8	640	769	1,359	65	70
OD 1"	25.4 × 1.65	46.0	90.0	93.0	110	110	6/4	414	543	803	22	14
OD 1 ½"	38.1 × 1.65	59.0	90.0	128.0	110	110	8/6	428	557	817	25	17
OD 2"	50.8 × 1.65	71.5	90.0	137.0	110	110	8/6	425	554	814	31	17
OD 2 ½"	63.5 × 1.65	90.0	125.0	167.5	110	135	8/6	438	567	972	35	25
OD 3"	76.2 × 1.65	103.0	125.0	176.0	110	135	8/6	477	606	1,011	45	26
OD 4"	101.6 × 2.11	127.5	125.0	194.0	110	170	10/8	483	612	1,017	45	32
OD 6"	152.4 × 2.77	177.0	150.0	274.0	170	210	10/8	642	771	1,361	65	66
IPS 2"	60.3 × 2.00	81.0	114.3	139.0	110	110	8/6	428	557	817	31	18
IPS 3"	88.9 × 2.30	115.0	152.5	174.0	110	135	8/6	475	604	1,009	35	27
IPS 4"	114.3 × 2.30	140.0	152.5	197.5	110	170	8/6	487	616	1,021	45	34
IPS 6"	168.3 × 2.77	192.0	152.5	278.5	170	210	10/8	634	763	1,353	65	67

Position	Description of the order code for the standard version					
1	**Valve type**					
	R	VARIVENT® double-seat valve, radial sealing				
2	**Housing combinations**					
	A	B	C	E		
						
3	**Supplement to the valve type**					
	L	With lifting actuator and spray cleaning				
	C	With lifting actuator without spray cleaning				
4/5	**Nominal width (upper housing/lower housing)**					
	DN 25	OD 1"				
	DN 40	OD 1 ½"				
	DN 50	OD 2"	IPS 2"			
	DN 65	OD 2 ½"				
	DN 80	OD 3"	IPS 3"			
	DN 100	OD 4"	IPS 4"			
	DN 125					
	DN 150	OD 6"	IPS 6"			
6	**Actuator type**					
	S	Air / Spring				
7	**Non-actuated position**					
	Z	Spring-to-close (NC)				
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**					
	Actuator (spring-to-close)	/ Lifting actuator	For nominal widths			
	BD	/ BLR	DN 25, DN 40, DN 50, OD 1", OD 1 ½", OD 2", IPS 2"			
	BD	/ CLR	DN 65, OD 2 ½"			
	BD	/ CLR5	DN 80, OD 3", IPS 3"			
	BE5	/ DLR5	DN 100, OD 4", IPS 4"			
	DG6	/ ELR6	DN 125, DN 150, OD 6", IPS 6"			
9	**Valve seat version**		Housing combination			
			A	B	C	E
	L0	Loose seat ring / Clamp connection	•	•	•	•
	V0	Welded seat ring / Port orientation 0°	•	•	•	•
	V1	Welded seat ring / Port orientation 90°	•	•	•	•
	V2	Welded seat ring / Port orientation 180°		•		
	V3	Welded seat ring / Port orientation 270°		•		
10	**Seal material in contact with the product**					
	1	EPDM (FDA)				
	2	FKM (FDA)				
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")				
11	**Surface quality of the housing**					
	2	Inside R_a ≤ 0.8 µm, outside matt blasted				
12	**Connection fittings**					
	N	Welding end				
13	**Accessories**					
	/ 52	Adhesive ID tag (up to DN 50, OD 2", IPS 2")				
	/ 52 / 05	Adhesive ID tag (from DN 65, OD 2 ½", IPS 3")				
+						
14–19	**Air connection / Control and feedback system**					
	00000M	Metric for air hose Ø 6/4 mm				
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)				
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation				

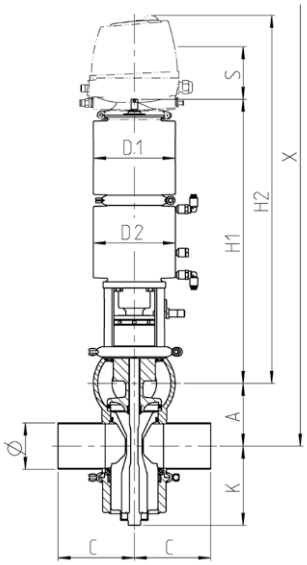
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	R			-	/	-	S	Z	-		-		-		2	N		+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type MX
Radial Sealing Double-seat Valve with Lifting Actuator





Technical data of the standard version	
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	10 bar (145 psi)
Water hammer safety	50 bar
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	T.VIS® M-20, T.VIS® A-15
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Welded seat ring
Marking / Certificates	CE, EHEDG, FDA

	Pipe			Housing		Actuator	Dimensions		Valve
Nominal width	Ø [mm]	A [mm]	C [mm]	K [mm]	D1 [mm]	D2 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 40	41.0 × 1.50	62.0	90	96.0	110	110	565	752.5	28.0	17
DN 50	53.0 × 1.50	74.0	90	110.0	110	110	571	790.5	35.0	17
DN 65	70.0 × 2.00	96.0	125	127.0	135	135	601	869.0	45.0	29
DN 80	85.0 × 2.00	111.0	125	134.5	135	135	609	905.5	45.0	29
DN 100	104.0 × 2.00	130.0	125	144.0	135	135	618	955.5	45.0	41
DN 125	129.0 × 2.00	155.0	150	179.0	210	210	798	1,173.0	65.0	75
DN 150	154.0 × 2.00	180.0	150	191.5	210	210	810	1,223.0	65.0	90
OD 1 ½"	38.1 × 1.65	59.0	90	94.5	110	110	564	746.5	28.0	17
OD 2"	50.8 × 1.65	71.5	90	108.5	110	110	570	785.5	35.0	17
OD 2 ½"	63.5 × 1.65	90.0	125	124.0	135	135	598	857.0	45.0	29
OD 3"	76.2 × 1.65	103.0	125	130.5	135	135	605	889.5	45.0	29
OD 4"	101.6 × 2.11	127.5	125	142.5	135	135	617	950.5	45.0	41
OD 6"	152.4 × 2.77	177.0	150	190.0	210	210	809	1,217.0	65.0	90

Position	Description of the order code for the standard version					
1	**Valve type**					
	MX	VARIVENT® double-seat valve type MX, radial sealing				
2	**Housing combinations**					
	A	B	C	E		
						
3	**Supplement to the valve type**					
	O	With lifting actuator double balanced, without spray cleaning				
4/5	**Nominal width (upper housing/lower housing)**					
	DN 40	OD 1 ½"				
	DN 50	OD 2"				
	DN 65	OD 2 ½"				
	DN 80	OD 3"				
	DN 100	OD 4"				
	DN 125					
	DN 150	OD 6"				
6	**Actuator type**					
	S	Air / Spring				
7	**Non-actuated position**					
	Z	Spring-to-close (NC)				
8	**Standard configuration with 6 bar air supply pressure for 10 bar product pressure**					
	Actuator (spring-to-close)	/ Lifting actuator	For nominal widths			
	BD	/ BLM	DN 40, DN 50, OD 1 ½", OD 2"			
	CF5	/ CLM	DN 65–DN 100 and OD 2 ½"–OD 4"			
	EH6Z	/ ELM	DN 125, DN 150, OD 6"			
9	**Valve seat version**		Housing combination			
			A	B	C	E
	V1	Welded seat ring / Port orientation 90°	•	•	•	•
	V2	Welded seat ring / Port orientation 180°		•		
	V3	Welded seat ring / Port orientation 270°		•		
10	**Seal material in contact with the product**					
	1	EPDM (FDA)				
	2	FKM (FDA)				
	3	HNBR (FDA); (up to DN 100, OD 4")				
11	**Surface quality of the housing**					
	2	Inside R_a ≤ 0.8 µm, outside matt blasted				
	5	Inside R_a ≤ 0.8 µm, completely ground				
12	**Connection fittings**					
	N	Welding end				
13	**Accessories**					
	/52/B	With adhesive ID tag and balancer cleaning device				
	/52	With adhesive ID tag, without balancer cleaning device				
+						
14–19	**Air connection / Control and feedback system**					
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation				

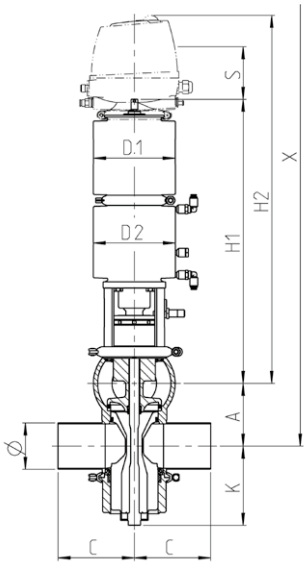
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	MX		O	-	/	-	S	Z	-		-		-			N		+						

For order codes differing from the standard version, please refer to section 8.

VARIVENT® 24/7 PMO Valve Type M_O/2.0 Radial Sealing Double-seat Valve with Lifting Actuator





Technical data of the standard version

Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	10 bar (145 psi)
Surface in contact with the product	$R_a \leq 0.8$ µm
External housing surface	Ground
Control and feedback system	Selectable; the feedback of all valve positions is required acc. to PMO
Actuator type	Pneumatic actuator air / spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Welded seat ring
Marking / Certificates	24/7 PMO VALVE 2.0 CE FDA

	Pipe		Housing		Actuator		Dimensions		Valve
Nominal width	Ø [mm]	A [mm]	C [mm]	K [mm]	D1 [mm]	D2 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
OD 1 ½"	38.1 × 1.65	59.0	90	94.5	110	110	564	789	27.5	17
OD 2"	50.8 × 1.65	71.5	90	108.5	110	110	570	795	35.0	20
OD 2 ½"	63.5 × 1.65	90.0	125	124.0	135	135	598	948	45.0	27
OD 3"	76.2 × 1.65	103.0	125	130.5	135	135	605	955	45.0	27
OD 4"	101.6 × 2.11	127.5	125	142.5	135	135	617	967	45.0	39
OD 6"	152.4 × 2.77	177.0	150	190.0	210	210	809	1,299	65.0	90

Position	Description of the order code for the standard version					
1	**Valve type**					
	M	VARIVENT® 24/7 PMO Valve 2.0				
2	**Housing combinations**					
	A	B	C	E		
						
3	**Supplement to the valve type**					
	O	With lifting actuator without spray cleaning				
4/5	**Nominal width (upper housing / lower housing)**					
	OD 1 ½"					
	OD 2"					
	OD 2 ½"					
	OD 3"					
	OD 4"					
	OD 6"					
6	**Actuator type**					
	S	Air / Spring				
7	**Non-actuated position**					
	Z	Spring-to-close (NC)				
8	**Standard configuration with 6 bar air supply pressure for 10 bar product pressure**					
	Actuator (spring-to-close)	/ Lifting actuator	For nominal widths			
	BD	/ BLM	OD 1 ½", OD 2"			
	CF5	/ CLM	OD 2 ½", OD 3", OD 4"			
	EH6	/ ELM	OD 6"			
9	**Valve seat version**		Housing combination			
			A	B	C	E
	V1	Welded seat ring / Port orientation 90°	•	•	•	•
	V2	Welded seat ring / Port orientation 180°		•		
	V3	Welded seat ring / Port orientation 270°		•		
10	**Seal material in contact with the product**					
	1	EPDM (FDA)				
	2	FKM (FDA)				
	3	HNBR (FDA); (up to OD 4")				
11	**Surface quality of the housing**					
	5	Inside R_a ≤ 0.8 µm, valve completely ground				
12	**Connection fittings**					
	N	Welding end				
13	**Accessories**					
	/S/52/3A/B/2	Valve after 3-A, adhesive ID tag, with outer balancer flushing (balancer cleaning device)				
	/S/52/3A/2	Valve after 3-A, adhesive ID tag, without outer balancer flushing (balancer cleaning device)				
+						
14–19	**Control and feedback system**					
	▶ T.VIS	▶ Information and order code for T.VIS® A-15 control and feedback system see catalog GEA Valve Automation				

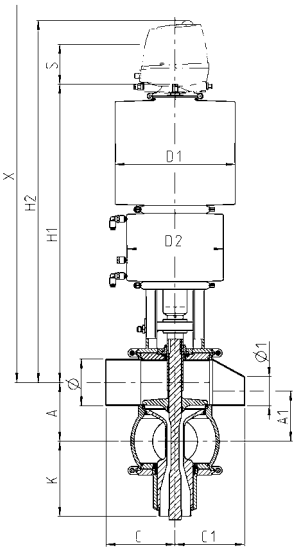
The code is composed as following, depending on the chosen configuration:

Position	**1**	**2**	**3**		**4/5**		**6**	**7**		**8**		**9**		**10**	**11**	**12**	**13**		**14 to 19**						
Code	M		O	-	/	-			-		-		-		5			+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® 24/7
Cheese Curd Valve Type M_C/2.0
PMO Double-seat Valve
with Lifting Actuator





Technical data of the standard version	
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM
Ambient temperature	0 to 45 °C
Air supply pressure	6–8 bar (87–116, psi)
Product pressure	10 bar (145 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Ground
Control and feedback system	Selectable; the feedback of all valve positions is required acc. to PMO
Actuator type	Pneumatic actuator air / spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Welded seat ring
Marking / Certificates	24/7 PMO VALVE 2.0 NON-STOP PRODUCTION™ CE FDA

	Pipe		Housing					Actuator		Dimensions		Valve		
Nominal width Valve Seat / CIP-Port / Port 2–4	Ø [mm]	Ø1 [mm]	A [mm]	A1 [mm]	C [mm]	C1 [mm]	K [mm]	D1 [mm]	D2 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Particle size [mm]	Weight [kg]
OD 4"/2.5"/4"	101.6 × 2.11	63.5 × 1.6	127.5	108.5	150	150.5	171	261	210	786	1,150	65	45	80
OD 4"/3"/4"	101.6 × 2.11	76.2 × 1.6	127.5	115.0	150	150.0	171	261	210	786	1,150	65	45	80
OD 4"/4"/4"	101.6 × 2.11	101.6 × 2.11	127.5	127.5	150	150.0	171	261	210	786	1,150	65	45	80
OD 6"/2.5"/4"	101.6 × 2.11	63.5 × 1.6	177.0	158.0	150	303.0	190	210	210	809	1,217	65	45	90
OD 6"/3"/4"	101.6 × 2.11	76.2 × 1.6	177.0	164.5	234	282.0	190	210	210	809	1,217	65	45	90
OD 6"/4"/4"	101.6 × 2.11	101.6 × 2.11	177.0	177.0	234	234.0	190	210	210	809	1,217	65	45	90
OD 6"/2.5"/6"	152.4 × 2.77	63.5 × 1.6	177.0	132.5	150	303.0	190	210	645	809	1,217	65	45	90
OD 6"/3"/6"	152.4 × 2.77	76.2 × 1.6	177.0	139.0	150	282.0	190	210	645	809	1,217	65	45	90
OD 6"/4"/6"	152.4 × 2.77	101.6 × 2.11	177.0	151.5	150	234.0	190	210	645	809	1,217	65	45	90
OD 6"/6"/6"	152.4 × 2.77	152.4 × 2.77	177.0	177.0	150	150.0	190	210	210	809	1,217	65	45	90

Position	Description of the order code for the standard version				
1	**Valve type**				
	M	VARIVENT® 24/7 PMO Valve 2.0			
2	**Housing combination**				
	E 				
3	**Supplement to the valve type**				For nominal widths
	C/CC	With lifting actuator without spray cleaning, only lower balancer			OD 4"
	O/CC	With lifting actuator without spray cleaning, double balanced			OD 6"
4/5	**Nominal width**				
	Seat diameter	Port 1 (CIP port)	Port 2	Port 3	Port 4
	OD 4"	OD 2.5" OD 3" OD 4"	OD 4"	OD 4"	OD 4"
	OD 6"	OD 2.5" OD 3" OD 4"	OD 4"	OD 4"	OD 4"
	OD 6"	OD 2.5" OD 3" OD 4" OD 6"	OD 6"	OD 6"	OD 6"
6	**Actuator type**				
	S	Air / Spring			
7	**Non-actuated position**				
	Z	Spring-to-close (NC)			
8	**Standard configuration with 6 bar air supply pressure for 10 bar product pressure**				
	Actuator (spring-to-close)	/ Lifting actuator	For nominal widths seat diameter		
	SN6	/ELMN6	OD 4"		
	EH6	/ELMN6	OD 6"		
9	**Valve seat version**		Housing combination		
			E		
	V1	Welded seat ring / Port orientation 90°	•		
10	**Seal material in contact with the product**				
	1	EPDM (FDA)			
	2	FKM (FDA)			
11	**Surface quality of the housing**				
	5	Inside $R_a \leq 0.8$ µm, valve completely ground			
12	**Connection fittings**				
	N	Welding end			
13	**Accessories**				
	/S/52/3A/B/2	Valve after 3-A, adhesive ID tag, with outer balancer flushing (balancer cleaning device)			
	/S/52/3A/2	Valve after 3-A, adhesive ID tag, without outer balancer flushing (balancer cleaning device)			
+					
14–19	**Control and feedback system**				
	▶ T.VIS	▶ Information and order code for T.VIS® A-15 control and feedback system see catalog GEA Valve Automation			

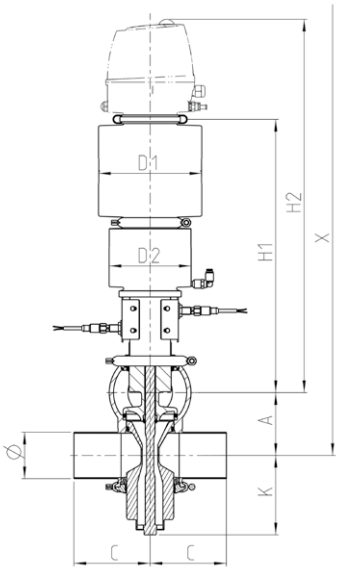
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	M	E		-	/	-	S	Z	-		-	V1	-		5	N		+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® 24/7 PMO Valve Type M_S/2.0 Radial Sealing Double-seat Valve with Divisible Actuator for use in CIP Supply and CIP Return Pipes





Technical data of the standard version

Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	10 bar (145 psi)
Product pressure during divisible function	Max. 5 bar (73 psi)
Surface in contact with the product	$R_a \leq 0.8$ µm
External housing surface	Ground
Control and feedback system	T.VIS® A-15; the feedback of all valve positions is required acc. to PMO
Actuator type	Pneumatic actuator air / spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Welded seat ring
Marking / Certificates	24/7 PMO VALVE 2.0, CE, FDA

	Pipe			Housing	Actuator		Dimensions			Valve	
Nominal width	Ø [mm]	A [mm]	C [mm]	K [mm]	D1 [mm]	D2 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
OD 1 ½"	38.1 × 1.65	59.0	90	94.5	135	110	338	542	725	27.5	18
OD 2"	50.8 × 1.65	71.5	90	108.5	135	110	384	548	764	35.0	18
OD 2 ½"	63.5 × 1.65	90.0	125	124.0	170	135	442	606	865	45.0	31
OD 3"	76.2 × 1.65	103.0	125	130.5	170	135	449	613	898	45.0	31
OD 4"	101.6 × 2.11	127.5	125	142.5	170	135	461	625	959	45.0	43
OD 6"	152.4 × 2.77	177.0	150	190.0	210	210	619	783	1,191	65.0	89

Position	Description of the order code for the standard version					
1	**Valve type**					
	M	VARIVENT® 24/7 PMO Valve 2.0				
2	**Housing combinations**					
	A	B	C	E		
						
3	**Supplement to the valve type**					
	S	With divisible actuator				
4/5	**Nominal width (upper housing / lower housing)**					
	OD 1 ½"					
	OD 2"					
	OD 2 ½"					
	OD 3"					
	OD 4"					
	OD 6"					
6	**Actuator type**					
	S	Air / Spring				
7	**Non-actuated position**					
	Z	Spring-to-close (NC)				
8	**Standard configuration with 6 bar air supply pressure for 10 bar product pressure**					
	Actuator (spring-to-close)	/ Divisible actuator	For nominal widths			
	CD	/BLMN35-DA	OD 1 ½"			
	CD	/BLMN48-DA	OD 2"			
	DF5	/CLMN56-DA	OD 2 ½", OD 3", OD 4"			
	EH6	/ELMN6-DA	OD 6"			
9	**Valve seat version**		Housing combination			
			A	B	C	E
	V1	Welded seat ring / Port orientation 90°	•	•	•	•
	V2	Welded seat ring / Port orientation 180°		•		
	V3	Welded seat ring / Port orientation 270°		•		
10	**Seal material in contact with the product**					
	1	EPDM (FDA)				
	2	FKM (FDA)				
	3	HNBR (FDA); (up to OD 4")				
11	**Surface quality of the housing**					
	5	Inside R_a ≤ 0.8 µm, valve completely ground				
12	**Connection fittings**					
	N	Welding end				
13	**Accessories**					
	/S/52/3A/2	Valve after 3-A, adhesive ID tag				
+						
14–19	**Control and feedback system**					
	▶ T.VIS®	▶ Information and order code for T.VIS® A-15 control and feedback system see catalog GEA Valve Automation				

The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	M		S	-	/	-	S	Z	-		-		-		5		/S/52/3A/2	+	T	A	15	M		

4 PIGGABLE MIXPROOF SHUT-OFF VALVES

VARIVENT® Hygienic Seat Valves



Overview of Double-seat Valves

VARIVENT® piggable double-seat valves are used for mixproof shut-off of incompatible fluids at pipe junctions when the valve needs to be piggable in parallel.

Special features
Certified, hygienic configuration
Metallic stop
Flexibility because of the modular principle
Proven seal geometry
Mixproof separation
Different valve configurations available
Optional separate lifting actuator to lift both valve discs for cleaning the leakage chamber and valve discs seals
(Optional) spray cleaning connection for cleaning the leakage chamber



Overview of Double-seat Valves

Function of the valve
When the valve is closed (non-actuated position), there are always two seals between the separated pipelines. If one seal is defective, the resulting leakage will be directed through the leakage outlet into the periphery, without mixing with the product in the second pipeline.

This method enables that there is no mixing between the products from two pipelines.

Application ranges
Piggable valve blocks
Piggable filling and emptying valves at product tanks

VARIVENT® double-seat valve type L
The piggable double-seat valve type L is used when incompatible media must be separated mixproof at pipeline junctions and when the valve needs to be piggable in parallel.

Only the lower valve housing with double horizontal ports is piggable, while the upper housing can have one or two horizontal ports. The upper and lower housings are always welded to each other.

Similar to the double-seat valve type R, type L also has the upper valve disc with an axial and the lower one with a radial seal. The double-seat valve type L cannot be equipped with a balancer in the lower housing to protect against pressure hammers.

Radial sealing double-seat valves are optimized to reduce switching leakage to a minimum (possibility of product residues adhering to the metallic surfaces).

The double-seat valve type L can be installed in the standing or suspended position. Compared to type L in suspended position, type L in standing position has a drain valve located between the housings.

This difference is necessary to handle possible leakages in the best manner: When the valve is installed in the standing position and if one seal is defective, the leakage is channeled out mainly via the drain valve located between the housings into the periphery, whereas leakage is channeled out via the leakage housing for valves in the suspended position.

The emptying valve pneumatically connected to the actuator is opened when the valve is closed and closes when the actuator is activated.

In the standing installation orientation of the valve type L, the cleaning media drains from two ports at the same time – through the port above the housings and through the emptying valve.



Cleaning the leakage chamber

Different media require different kind of cleaning. Therefore, the VARIVENT® modular system offers double-seat valves with three cleaning options allowing selecting the optimal solution depending on the used media.

Spray cleaning

This kind of leakage chamber cleaning is typically used for fluid media which are easily flushable and do not stick to the seal surfaces or possibly crystallize. All systems related to the cleaning of the valve should regularly be used to ensure an optimal cleaning result and to prevent damages of the valve.

An integrated spray nozzle in the double seat distributes the cleaning medium through the double disc into the leakage chamber. The cleaning medium is supplied via an external cleaning connection located at the height of the lantern. It flows unpressurised through the leakage outlet into the periphery. Cleaning is carried out when the valve is in closed position. Therefore, the leakage chamber can be cleaned independently of pipe cleaning. Product can flow in both pipes during spray cleaning. Intermediate flushing is possible before or after switching the valve. As the valve is in closed position for spray cleaning, the sealing surfaces in contact with the seat ring are not rinsed during cleaning.

Necessary periphery for spray cleaning

As spray cleaning requires external supply of cleaning media via the external cleaning connection located at the height of the lantern, feed valves in the periphery are necessary to channel cleaning media to the cleaning connection on time.

Feed valves with a relatively small nominal diameter are used on the pipe that carries the cleaning medium. Each feed valve usually supplies several cleaning connections of double-seat valves. All connected double-seat valves must be adequately supplied with cleaning medium during cleaning.

Lifting actuator

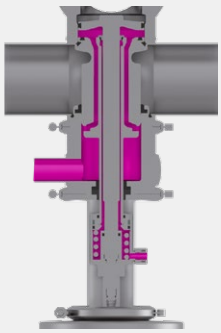
This kind of leakage chamber cleaning is typically used for sensitive media which also require cleaning of the seal surfaces to rinse possible adhering microorganisms. It can also be used for adhering and crystalizing media.

The lifting actuator allows separate lifting of each valve disc. The leakage chamber is cleaned during pipe cleaning via lifting the upper or lower valve disc. Cleaning medium passes the seal of the lifted valve disc, cleans the leakage chamber, and flows unpressurized through the leakage outlet into the periphery. As such, all surfaces in contact with the cleaning medium are rinsed, including the surfaces of the valve disc seals. Cleaning is only possible during pipe cleaning.

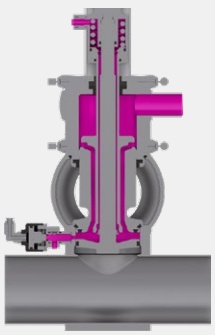
Lifting actuator and spray cleaning

This kind of cleaning is typically used for critical media which are highly adhesive, easily crystallize and are sticky (e.g., sugar solutions) or viscous (e.g., yoghurt).

The lifting actuator allows cleaning the leakage chamber and valve discs seals during pipe cleaning whereas spray cleaning allows intermediate cleaning of the leakage chamber during production. Short intermediate cleaning is often done after each switching process.



Spray cleaning VARIVENT® piggable double-seat valve upside down installation

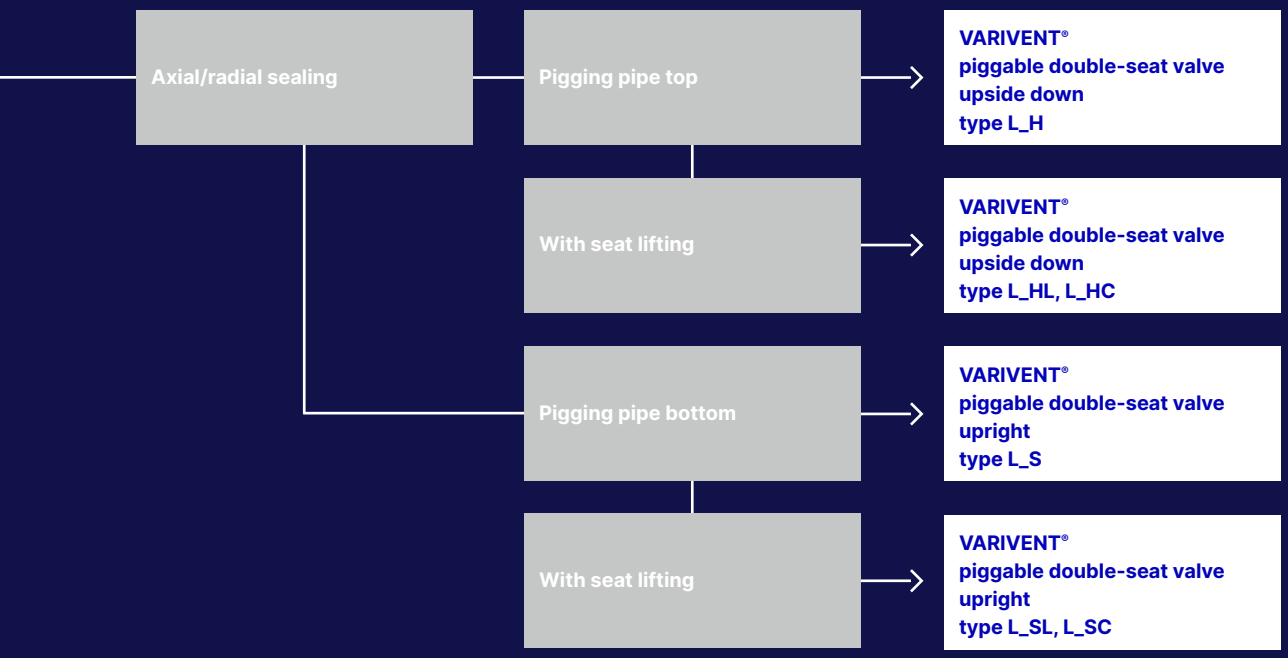


Spray cleaning VARIVENT® piggable double-seat valve upright installation

Selection Matrix

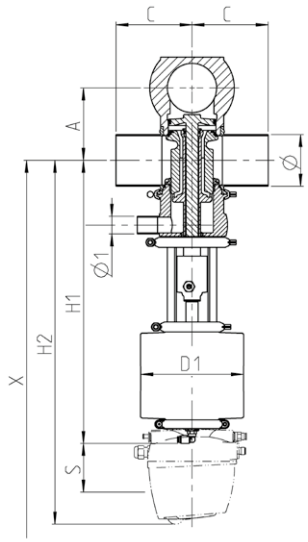
Mixproof valves

Piggable


Axial/radial sealing
Pigging pipe top
VARIVENT®
piggable double-seat valve
upside down
type L_H
With seat lifting
VARIVENT®
piggable double-seat valve
upside down
type L_HL, L_HC
Pigging pipe bottom
VARIVENT®
piggable double-seat valve
upright
type L_S
With seat lifting
VARIVENT®
piggable double-seat valve
upright
type L_SL, L_SC

VARIVENT® Type L_H Piggable Double-seat Valve Upside Down





Technical data of the standard version	
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	7 bar (101 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Welded seat ring
Marking / Certificates	CE FDA

	Pipe	Pipe leakage	Housing		Actuator	Spray cleaning hose (PTFE)	Dimensions			Valve	
Nominal width	Ø [mm]	Ø1 [mm]	A [mm]	C [mm]	D1 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 40	41.0 × 1.50	23 × 1.5	74.0	90	135	8/6	415	544	649	25	15.0
DN 50	53.0 × 1.50	23 × 1.5	86.0	90	135	8/6	421	550	655	33	15.4
DN 65	70.0 × 2.00	29 × 1.5	104.0	125	170	8/6	461	590	765	35	27.8
DN 80	85.0 × 2.00	29 × 1.5	119.0	125	170	8/6	468	597	772	35	28.6
DN 100	104.0 × 2.00	29 × 1.5	138.0	125	210	8/6	468	597	772	35	41.8
OD 1 ½"	38.1 × 1.65	23 × 1.5	71.0	90	135	8/6	416	545	650	25	15.5
OD 2"	50.8 × 1.65	23 × 1.5	83.5	90	135	8/6	422	551	656	33	15.8
OD 2 ½"	63.5 × 1.65	29 × 1.5	98.0	125	170	8/6	465	594	769	35	27.2
OD 3"	76.2 × 1.65	29 × 1.5	111.0	125	170	8/6	471	600	775	35	28.2
OD 4"	101.6 × 2.11	29 × 1.5	135.5	125	210	8/6	470	598	774	35	41.9

Position	Description of the order code for the standard version			
1	**Valve type**			
	L	VARIVENT® double-seat valve, piggable		
2	**Housing combinations**			
	C	E		
				
3	**Supplement to the valve type**			
	H	Upside down		
4/5	**Nominal width (upper housing/lower housing)**			
	DN 40	OD 1 ½"		
	DN 50	OD 2"		
	DN 65	OD 2 ½"		
	DN 80	OD 3"		
	DN 100	OD 4"		
6	**Actuator type**			
	S	Air / Spring		
7	**Non-actuated position**			
	Z	Spring-to-close (NC)		
8	**Standard configuration with 6 bar air supply pressure for 7 bar product pressure (higher pressures on request)**			
	Actuator (spring-to-close)	For nominal widths		
	CD	DN 40, DN 50, OD 1 ½", OD 2"		
	DF	DN 65, DN 80, OD 2 ½", OD 3"		
	EG	DN 100, OD 4"		
9	**Valve seat version**		Housing combination	
			C	E
	V1	Welded seat ring / Port orientation 90°	•	•
10	**Seal material in contact with the product**			
	1	EPDM (FDA)		
	2	FKM (FDA)		
	3	HNBR (FDA)		
11	**Surface quality of the housing**			
	2	Inside R_a ≤ 0.8 µm, outside matt blasted		
12	**Connection fittings**			
	N	Welding end		
13	**Accessories**			
	/ 52	Adhesive ID tag		
+				
14–19	**Air connection / Control and feedback system**			
	00000M	Metric for air hose Ø 6/4 mm		
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)		
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation		

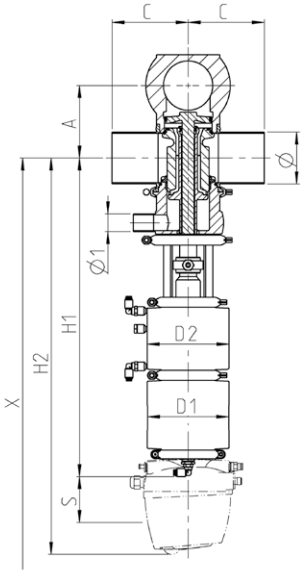
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	L		H	-	/	-	S	Z	-		-	V1	-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type L_HL, L_HC Piggable Double-seat Valve Upside Down with Lifting Actuator





Technical data of the standard version	
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	7 bar (101 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Welded seat ring
Marking / Certificates	CE FDA

	Pipe	Pipe leakage	Housing		Actuator		Spray cleaning hose (PTFE)	Dimensions			Valve	
Nominal width	Ø [mm]	Ø1 [mm]	A [mm]	C [mm]	D1 [mm]	D2 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 40	41.0 × 1.50	23 × 1.5	74.0	90	110	110	8/6	506	635	740	25	18.0
DN 50	53.0 × 1.50	23 × 1.5	86.0	90	110	110	8/6	504	633	738	33	18.4
DN 65	70.0 × 2.00	29 × 1.5	104.0	125	135	135	8/6	514	643	818	35	29.7
DN 80	85.0 × 2.00	29 × 1.5	119.0	125	135	135	8/6	521	650	825	35	30.6
DN 100	104.0 × 2.00	29 × 1.5	138.0	125	170	170	8/6	551	680	855	35	45.4
OD 1 ½"	38.1 × 1.65	23 × 1.5	71.0	90	110	110	8/6	507	636	741	25	18.1
OD 2"	50.8 × 1.65	23 × 1.5	83.5	90	110	110	8/6	505	634	739	33	18.4
OD 2 ½"	63.5 × 1.65	29 × 1.5	98.0	125	135	135	8/6	517	646	821	35	29.1
OD 3"	76.2 × 1.65	29 × 1.5	111.0	125	135	135	8/6	525	654	829	35	30.1
OD 4"	101.6 × 2.11	29 × 1.5	135.5	125	170	170	8/6	552	681	856	35	45.4

Position	Description of the order code for the standard version				
1	**Valve type**				
	L	VARIVENT® double-seat valve, piggable			
2	**Housing combinations**				
	C 	E 			
3	**Supplement to the valve type**				
	HL	Upside down with lifting actuator and spray cleaning			
	HC	Upside down with lifting actuator without spray cleaning			
4/5	**Nominal width (upper housing/lower housing)**				
	DN 40	OD 1 ½"			
	DN 50	OD 2"			
	DN 65	OD 2 ½"			
	DN 80	OD 3"			
	DN 100	OD 4"			
6	**Actuator type**				
	S	Air / Spring			
7	**Non-actuated position**				
	Z	Spring-to-close (NC)			
8	**Standard configuration with 6 bar air supply pressure for 7 bar product pressure (higher pressures on request)**				
	Actuator (spring-to-close)	/ Lifting actuator	For nominal widths		
	BD	/ BLRN 40	DN 40, OD 1 ½"		
	BD	/ BLRN 50	DN 50, OD 2"		
	CF	/ CLT	DN 65, DN 80, OD 2 ½", OD 3"		
	DG	/ DLRN	DN 100, OD 4"		
9	**Valve seat version**		Housing combination		
			C	E	
	V1	Welded seat ring / Port orientation 90°	•	•	
10	**Seal material in contact with the product**				
	1	EPDM (FDA)			
	2	FKM (FDA)			
	3	HNBR (FDA)			
11	**Surface quality of the housing**				
	2	Inside R_a ≤ 0.8 µm, outside matt blasted			
12	**Connection fittings**				
	N	Welding end			
13	**Accessories**				
	/ 52	Adhesive ID tag			
+					
14–19	**Air connection / Control and feedback system**				
	00000M	Metric for air hose Ø 6/4 mm			
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)			
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation			

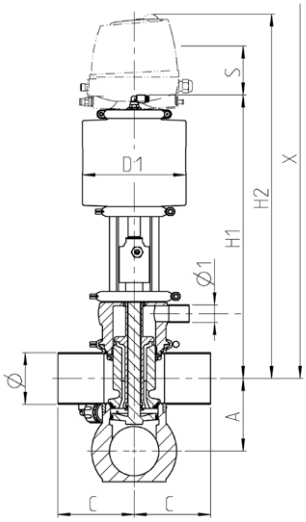
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	L			-	/	-	S	Z	-		-	V1	-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type L_S Piggable Double-seat Valve Upright





Technical data of the standard version	
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	7 bar (101 psi)
Surface in contact with the product	$R_a \leq 0.8$ µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Welded seat ring
Marking / Certificates	CE FDA

	Pipe	Pipe leakage	Housing		Actuator	Spray cleaning hose (PTFE)	Dimensions			Valve	
Nominal width	Ø [mm]	Ø1 [mm]	A [mm]	C [mm]	D1 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 40	41.0 × 1.50	23 × 1.5	74.0	90	135	8/6	415	544	649	25	15.0
DN 50	53.0 × 1.50	23 × 1.5	86.0	90	135	8/6	421	550	655	33	15.4
DN 65	70.0 × 2.00	29 × 1.5	104.0	125	170	8/6	461	590	765	35	27.8
DN 80	85.0 × 2.00	29 × 1.5	119.0	125	170	8/6	468	597	772	35	28.6
DN 100	104.0 × 2.00	29 × 1.5	138.0	125	210	8/6	468	597	772	35	41.8
OD 1 ½"	38.1 × 1.65	23 × 1.5	71.0	90	135	8/6	416	545	650	25	15.5
OD 2"	50.8 × 1.65	23 × 1.5	83.5	90	135	8/6	422	551	656	33	15.8
OD 2 ½"	63.5 × 1.65	29 × 1.5	98.0	125	170	8/6	465	594	769	35	27.2
OD 3"	76.2 × 1.65	29 × 1.5	111.0	125	170	8/6	471	600	775	35	28.2
OD 4"	101.6 × 2.11	29 × 1.5	135.5	125	210	8/6	470	599	774	35	41.9

Position	Description of the order code for the standard version			
1	**Valve type**			
	L	VARIVENT® double-seat valve, piggable		
2	**Housing combinations**			
	C 	E 		
3	**Supplement to the valve type**			
	S	Upright		
4/5	**Nominal width (upper housing/lower housing)**			
	DN 40	OD 1 ½"		
	DN 50	OD 2"		
	DN 65	OD 2 ½"		
	DN 80	OD 3"		
	DN 100	OD 4"		
6	**Actuator type**			
	S	Air / Spring		
7	**Non-actuated position**			
	Z	Spring-to-close (NC)		
8	**Standard configuration with 6 bar air supply pressure for 7 bar product pressure (higher pressures on request)**			
	Actuator (spring-to-close)	For nominal widths		
	CD	DN 40, DN 50, OD 1 ½", OD 2"		
	DF	DN 65, DN 80, OD 2 ½", OD 3"		
	EG	DN 100, OD 4"		
9	**Valve seat version**		Housing combination	
			C	E
	V1	Welded seat ring / Port orientation 90°	•	•
10	**Seal material in contact with the product**			
	1	EPDM (FDA)		
	2	FKM (FDA)		
	3	HNBR (FDA)		
11	**Surface quality of the housing**			
	2	Inside R_a ≤ 0.8 µm, outside matt blasted		
12	**Connection fittings**			
	N	Welding end		
13	**Accessories**			
	/ 52	Adhesive ID tag		
	/C	Flush valve, plastic, up to 80 °C		
	/C-S	Flush valve, stainless steel, over 80 °C		
+				
14–19	**Air connection / Control and feedback system**			
	00000M	Metric for air hose Ø 6/4 mm		
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)		
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation		

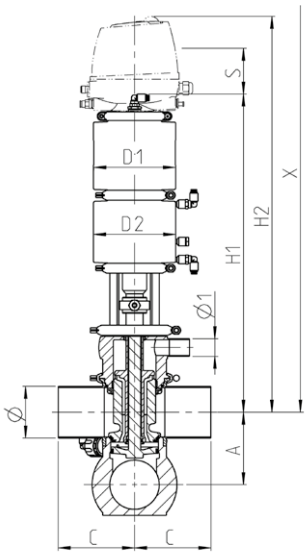
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	L		S	-	/	-	S	Z	-		-	V1	-		2	N		+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type L_SL, L_SC Piggable Double-seat Valve Upright with Lifting Actuator





Technical data of the standard version	
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	7 bar (101 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Welded seat ring
Marking / Certificates	CE FDA

	Pipe	Pipe leakage	Housing		Actuator		Spray cleaning hose (PTFE)	Dimensions			Valve	
Nominal width	Ø [mm]	Ø1 [mm]	A [mm]	C [mm]	D1 [mm]	D2 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 40	41.0 × 1.50	23 × 1.5	74.0	90	110	110	8/6	506	635	740	25	18.0
DN 50	53.0 × 1.50	23 × 1.5	86.0	90	110	110	8/6	504	633	738	33	18.4
DN 65	70.0 × 2.00	29 × 1.5	104.0	125	135	135	8/6	514	643	818	35	29.7
DN 80	85.0 × 2.00	29 × 1.5	119.0	125	135	135	8/6	521	650	825	35	30.6
DN 100	104.0 × 2.00	29 × 1.5	138.0	125	170	170	8/6	551	680	855	35	45.4
OD 1 ½"	38.1 × 1.65	23 × 1.5	71.0	90	110	110	8/6	507	636	741	25	18.1
OD 2"	50.8 × 1.65	23 × 1.5	83.5	90	110	110	8/6	505	634	739	33	18.4
OD 2 ½"	63.5 × 1.65	29 × 1.5	98.0	125	135	135	8/6	517	646	821	35	29.1
OD 3"	76.2 × 1.65	29 × 1.5	111.0	125	135	135	8/6	525	654	829	35	30.1
OD 4"	101.6 × 2.11	29 × 1.5	135.5	125	170	170	8/6	552	681	856	35	45.4

Position	Description of the order code for the standard version			
1	**Valve type**			
	L	VARIVENT® double-seat valve, piggable		
2	**Housing combinations**			
	C 	E 		
3	**Supplement to the valve type**			
	SL	Upright with lifting actuator and spray cleaning		
	SC	Upright with lifting actuator without spray cleaning		
4/5	**Nominal width (upper housing/lower housing)**			
	DN 40	OD 1 ½"		
	DN 50	OD 2"		
	DN 65	OD 2 ½"		
	DN 80	OD 3"		
	DN 100	OD 4"		
6	**Actuator type**			
	S	Air / Spring		
7	**Non-actuated position**			
	Z	Spring-to-close (NC)		
8	**Standard configuration with 6 bar air supply pressure for 7 bar product pressure (higher pressures on request)**			
	Actuator (spring-to-close)	/ Lifting actuator	For nominal widths	
	BD	/ BLRN 40	DN 40, OD 1 ½"	
	BD	/ BLRN 50	DN 50, OD 2"	
	CF	/ CLT	DN 65, DN 80, OD 2 ½", OD 3"	
	DG	/ DLRN	DN 100, OD 4"	
9	**Valve seat version**		Housing combination	
			C	E
	V1	Welded seat ring / Port orientation 90°	•	•
10	**Seal material in contact with the product**			
	1	EPDM (FDA)		
	2	FKM (FDA)		
	3	HNBR (FDA)		
11	**Surface quality of the housing**			
	2	Inside R_a ≤ 0.8 µm, outside matt blasted		
12	**Connection fittings**			
	N	Welding end		
13	**Accessories**			
	/ 52	Adhesive ID tag		
	/C	Flush valve, plastic, up to 80 °C		
	/C-S	Flush valve, stainless steel, over 80 °C		
+				
14–19	**Air connection / Control and feedback system**			
	00000M	Metric for air hose Ø 6/4 mm		
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)		
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation		

The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	L			-	/	-	S	Z	-		-	V1	-		2	N		+							

For order codes differing from the standard version, please refer to section 8.

5 MIXPROOF DIVERT VALVES

VARIVENT® Hygienic Seat Valves



Overview of Double-seat Valves

VARIVENT® mixproof divert valves are used for distributing liquid in pipelines, i.e. for distributing a liquid from one pipeline into two others, in which case one of the two pipelines must be shut off from the outlet line with a mixproof function.

Special features
Certified, hygienic configuration
Metallic stop
Flexibility because of the modular principle
Proven seal geometry
Mixproof separation
Optional separate lifting actuator to lift both valve discs for cleaning the leakage chamber and valve discs seals
(Optional) spray cleaning connection for cleaning the leakage chamber

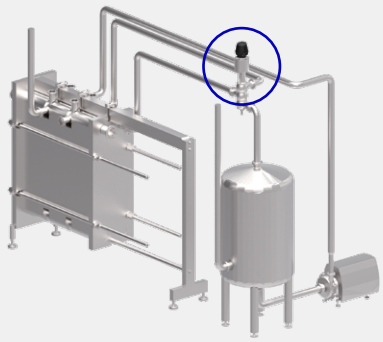


Overview of Double-seat Valves

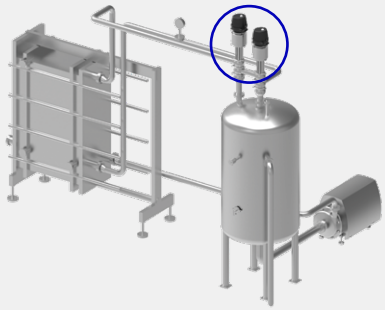
Application examples

The typical application for valve type Y with changeover function is the divert function after a pasteurizer. The VARIVENT® mixiproof changeover valve type Y reliably separates pasteurized products from unpasteurized products thanks to its upper double seat. Unpasteurized products can be returned to the buffer tank.

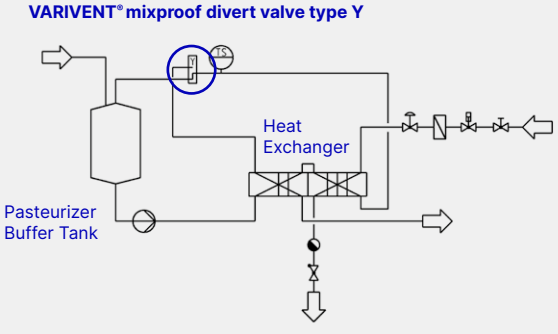
The VARIVENT® Flow Diversion Device type X_R is designed to meet US PMO requirements. Due to the adaption of two divert valves, leak detection is ensured with a cavity in the same nominal size as the pipes diameter. The typical application is the divert function after a pasteurizer in the dairy industry.



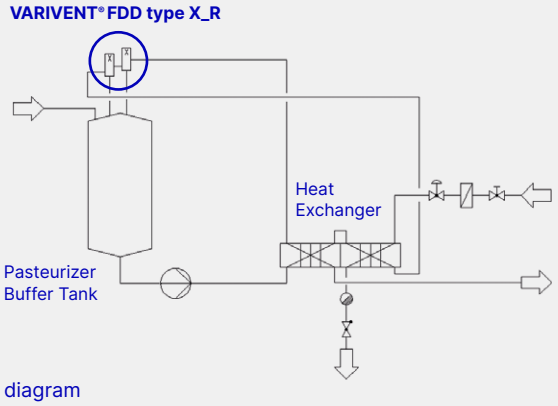
Mixproof divert function downstream of a pasteurizer



Mixproof divert function downstream of a pasteurizer



P & I Diagram



R & I diagram

VARIVENT®

The VARIVENT® modular system has many options available. Please refer to the options section (section 8) for information about these.

Sizes

VARIVENT® mixproof divert valve type Y	VARIVENT® Flow Diversion Device
DN 25 – DN 150	
OD 1" – OD 6"	OD 1" – OD 4"
IPS 2" – IPS 6"	

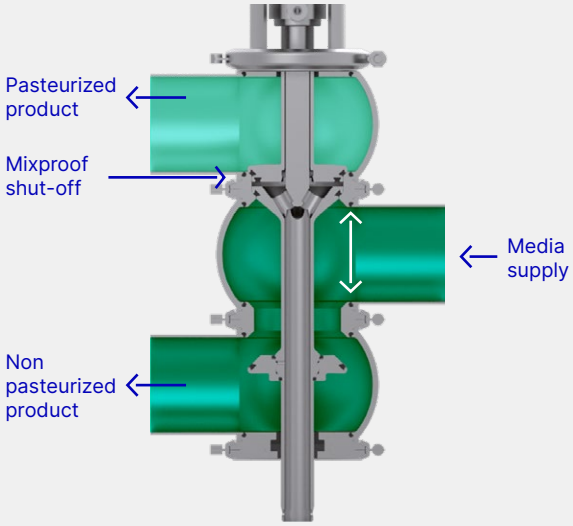
The VARIVENT® mixproof divert valve type Y offers the possibility of mixproof separation and changeover back to the pasteuriser.

The VARIVENT® Flow Diversion Device consists of two radial sealing divert valves of type XKR or XWR that form a module with fixed connection. The mixproof valve combination is used to permit the properties “flow division”, “leakage detection” or “forward flow” downstream of every pasteurizer. It is ensured that there are always two seals between pasteurized and non-pasteurized milk.



GEA Flow Diversion Device (FDD) type X_R

Mixproof Separation



Mixproof separation between the upper and middle housing by two seals on VARIVENT® mixproof divert valve type Y

Function of the valve

When the valve is closed (non-actuated position), there are always two seals between the middle and upper pipeline. If one seal is defective at this point, the resulting leakage can be deliberately channelled through the leakage outlet into the periphery, without mixing with the product in the second pipeline. The shut-off between the middle and lower housing is performed with only one seal, and is not suitable for separating two incompatible media.

This method enables that there will not be any mixture between the products in the pipelines.

Switching leakage

In axial sealing double-seat valves, with every switching procedure there is a short time during which the lower valve disc is neither in contact with the middle seal of the upper valve disc, nor has it reached the axial seat surface of the seat ring. During this brief moment liquid can percolate through the resulting gap into the leakage chamber and flow out into the atmosphere. This is referred to as the switching leakage.

Recommended flow direction

To avoid water hammers when closing the valve while the product is flowing, mixproof divert valves should be switched against the flow direction of the product.

Overview of Double-seat Valves

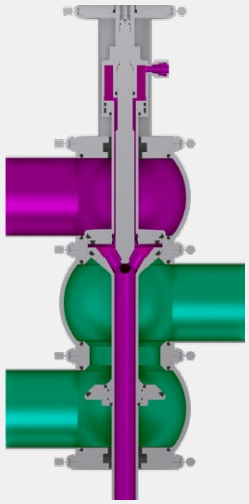
Cleaning the leakage chamber
Different media require different kind of cleaning. Therefore, the VARIVENT® modular system offers double-seat valves with three cleaning options allowing selecting the optimal solution depending on the used media.

Spray cleaning
This kind of leakage chamber cleaning is typically used for fluid media which are easily flushable and do not stick to the seal surfaces or possibly crystallize. All systems related to the cleaning of the valve should regularly be used to ensure an optimal cleaning result and to prevent damages of the valve.

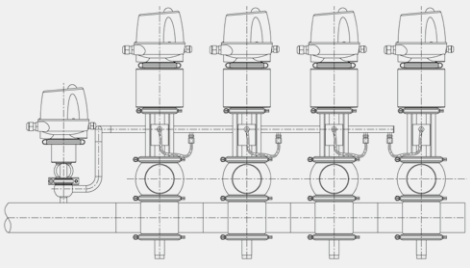
An integrated spray nozzle in the double seat distributes the cleaning medium through the double disc into the leakage chamber. The cleaning medium is supplied via an external cleaning connection located at the height of the lantern. It flows unpressurised through the leakage outlet into the periphery. Cleaning is carried out when the valve is in closed position. Therefore, the leakage chamber can be cleaned independently of pipe cleaning. Product can flow in both pipes during spray cleaning. Intermediate flushing is possible before or after switching the valve. As the valve is in closed position for spray cleaning, the sealing surfaces in contact with the seat ring are not rinsed during cleaning.

Necessary periphery for spray cleaning
As spray cleaning requires external supply of cleaning media via the external cleaning connection located at the height of the lantern, feed valves in the periphery are necessary to channel cleaning media to the cleaning connection on time.

Feed valves with a relatively small nominal diameter are used on the pipe that carries the cleaning medium. Each feed valve usually supplies several cleaning connections of double-seat valves. All connected double-seat valves must be adequately supplied with cleaning medium during cleaning.



Spray cleaning in the double-seat valve



Application example of a feed valve

Lifting actuator

This kind of leakage chamber cleaning is typically used for sensitive media which also require cleaning of the seal surfaces to rinse possible adhering microorganisms. It can also be used for adhering and crystalizing media.

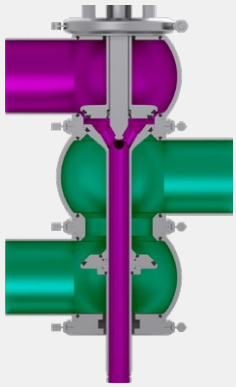
The lifting actuator allows separate lifting of each valve disc. The leakage chamber is cleaned during pipe cleaning via lifting the upper or lower valve disc. Cleaning medium passes the seal of the lifted valve disc, cleans the leakage chamber, and flows unpressurized through the leakage outlet into the periphery. As such, all surfaces in contact with the cleaning medium are rinsed, including the surfaces of the valve disc seals. Cleaning is only possible during pipe cleaning.

Double discs (upper valve discs) are always lifted upwards whereas valve discs (lower valve discs) are lifted upwards or downwards depending on the sealing: Axial sealing valve discs are lifted upwards, radial sealing valve discs are lifted downwards.

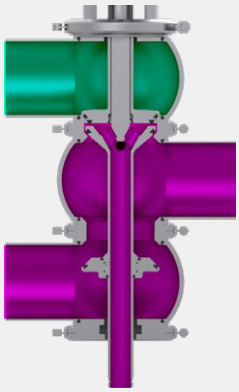
Lifting actuator and spray cleaning

This kind of cleaning is typically used for critical media which are highly adhesive, easily crystallize and are sticky (e.g., sugar solutions) or viscous (e.g., yoghurt).

The lifting actuator allows cleaning the leakage chamber and valve discs seals during pipe cleaning whereas spray cleaning allows intermediate cleaning of the leakage chamber during production. Short intermediate cleaning is often done after each switching process.



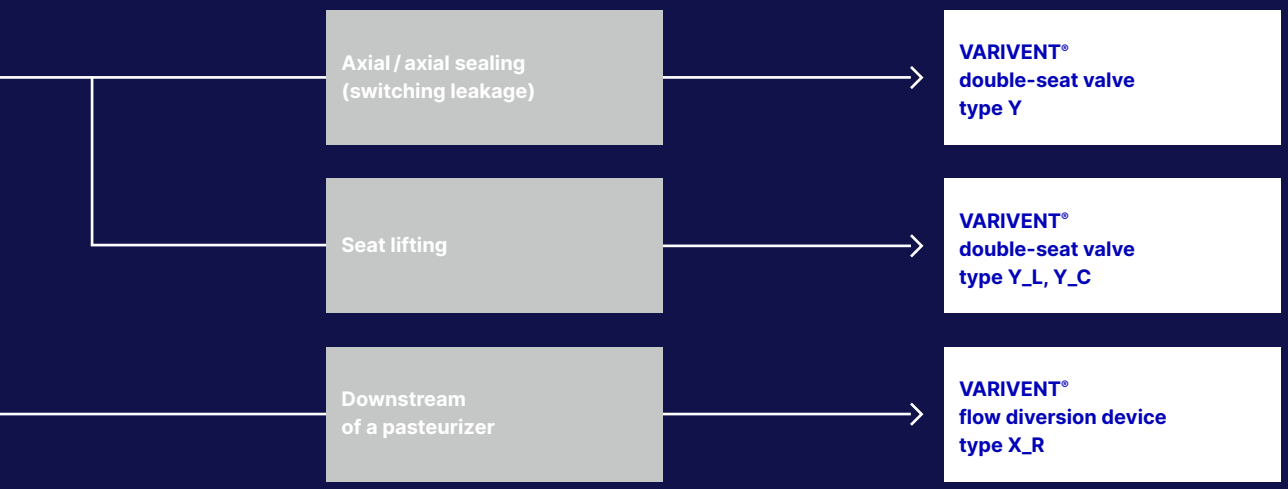
If there is cleaning media in the upper pipeline, the upper valve disc can be lifted up to allow the cleaning of the surface of the seal and the leakage chamber to be cleaned.



If there is cleaning media in the lower pipeline, valve type Y permits lifting of the lower valve disc upwards.

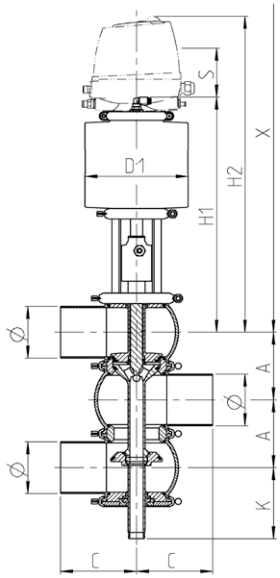
Selection Matrix

Mixproof divert valves	**Divert function**
Valve combination for U.S. dairy market	**Mixproof divert function According to PMO directives**


Axial / axial sealing
(switching leakage)
VARIVENT®
double-seat valve
type Y
Seat lifting
VARIVENT®
double-seat valve
type Y_L, Y_C
Downstream
of a pasteurizer
VARIVENT®
flow diversion device
type X_R

VARIVENT® Type Y
Double-seat Valve





Technical data of the standard version	
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring
Marking / Certificates	CE FDA

	Pipe			Housing	Actuator	Spray cleaning hose (PTFE)	Dimensions			Valve	
Nominal width	Ø [mm]	A [mm]	C [mm]	K [mm]	D1 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	50.0	90.0	82	99	6/4	294	423	733	20	9
DN 40	41.0 × 1.50	62.0	90.0	93	135	8/6	335	464	774	19	14
DN 50	53.0 × 1.50	74.0	90.0	99	135	8/6	341	470	780	27	14
DN 65	70.0 × 2.00	96.0	125.0	125	170	8/6	382	511	996	27	24
DN 80	85.0 × 2.00	111.0	125.0	117	170	8/6	390	519	1,004	27	25
DN 100	104.0 × 2.00	130.0	125.0	127	210	8/6	399	528	1,013	27	34
DN 125	129.0 × 2.00	155.0	150.0	171	260	10/8	555	684	1,359	55	67
DN 150	154.0 × 2.00	180.0	150.0	184	210	10/8	709	838	1,513	55	85
OD 1"	25.4 × 1.65	46.0	90.0	80	99	6/4	292	421	731	16	9
OD 1 ½"	38.1 × 1.65	59.0	90.0	91	135	8/6	337	466	776	18	13
OD 2"	50.8 × 1.65	71.5	90.0	97	135	8/6	343	472	782	26	14
OD 2 ½"	63.5 × 1.65	90.0	125.0	122	170	8/6	386	515	1,000	27	23
OD 3"	76.2 × 1.65	103.0	125.0	113	170	8/6	393	522	1,007	26	24
OD 4"	101.6 × 2.11	127.5	125.0	125	210	8/6	401	530	1,015	26	34
OD 6"	152.4 × 2.77	177.0	150.0	185	210	10/8	708	837	1,512	55	85
IPS 2"	60.3 × 2.00	81.0	114.3	102	99	8/6	338	467	777	27	15
IPS 3"	88.9 × 2.30	115.0	152.5	119	170	8/6	388	517	1,002	27	24
IPS 4"	114.3 × 2.30	140.0	152.5	132	210	8/6	394	523	1,008	27	36
IPS 6"	168.3 × 2.77	192.0	152.5	190	210	10/8	702	831	1,506	55	86

Please note: The following clearances are required for demounting the additional disc: DN 25 – 50: 50 mm, DN 65 – 100: 80 mm, DN 125 – 150: 110 mm

Position	Description of the order code for the standard version		
1	**Valve type**		
	Y	VARIVENT® double-seat valve	
2	**Housing combinations**		
	W Y X Z U M N G 		
3	**Supplement to the valve type**		
	Reserved for options		
4/5	**Nominal width (upper housing/lower housing)**		
	DN 25	OD 1"	
	DN 40	OD 1 ½"	
	DN 50	OD 2"	IPS 2"
	DN 65	OD 2 ½"	
	DN 80	OD 3"	IPS 3"
	DN 100	OD 4"	IPS 4"
	DN 125		
	DN 150	OD 6"	IPS 6"
6	**Actuator type**		
	S	Air / Spring	
7	**Non-actuated position**		
	Z	Spring-to-close (NC)	
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**		
	Actuator (spring-to-close)		For nominal widths
	AA		DN 25, OD 1"
	CB		DN 40, DN 50, OD 1 ½", OD 2", IPS 2"
	DD		DN 65, DN 80, OD 2 ½", OD 3", IPS 3"
	EF		DN 100, OD 4", IPS 4"
	SH6		DN 125
	TK6		DN 150, OD 6", IPS 6"
9	**Valve seat version**		
	L00	Loose seat ring / Clamp connection	
10	**Seal material in contact with the product**		
	1	EPDM (FDA)	
	2	FKM (FDA)	
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")	
11	**Surface quality of the housing**		
	2	Inside R_a ≤ 0.8 µm, outside matt blasted	
12	**Connection fittings**		
	N	Welding end	
13	**Accessories**		
	/52	Adhesive ID tag	
+			
14–19	**Air connection / Control and feedback system**		
	00000M	Metric for air hose Ø 6/4 mm	
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)	
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation	

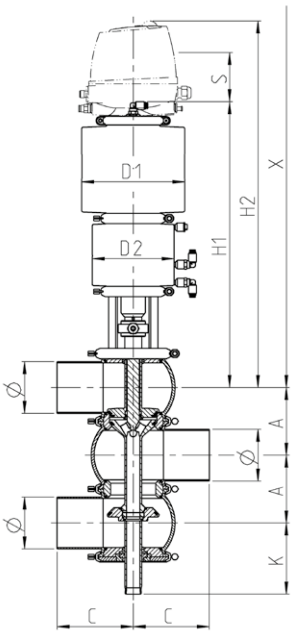
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	Y			-	/	-	S	Z	-		-	L0	-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type Y_L, Y_C Double-seat Valve with Lifting Actuator





Technical data of the standard version	
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring
Marking / Certificates	CE FDA

	Pipe			Housing	Actuator		Spray cleaning hose (PTFE)	Dimensions				Valve
Nominal width	Ø [mm]	A [mm]	C [mm]	K [mm]	D1 [mm]	D2 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	50.0	90.0	82	110	110	6/4	412	541	851.0	20	15
DN 40	41.0 × 1.50	62.0	90.0	93	135	110	8/6	426	555	865.0	19	18
DN 50	53.0 × 1.50	74.0	90.0	99	135	110	8/6	424	553	863.0	27	18
DN 65	70.0 × 2.00	96.0	125.0	125	170	135	8/6	465	594	1,079.0	27	29
DN 80	85.0 × 2.00	111.0	125.0	117	170	135	8/6	473	602	1,086.5	27	30
DN 100	104.0 × 2.00	130.0	125.0	127	210	170	8/6	482	611	1,096.0	27	42
DN 125	129.0 × 2.00	155.0	150.0	171	260	210	10/8	663	792	1,466.5	55	81
DN 150	154.0 × 2.00	180.0	150.0	184	210	210	10/8	816	945	1,620.0	55	103
OD 1"	25.4 × 1.65	46.0	90.0	80	110	110	6/4	414	543	853.0	16	15
OD 1 ½"	38.1 × 1.65	59.0	90.0	91	135	110	8/6	428	557	866.5	18	18
OD 2"	50.8 × 1.65	71.5	90.0	97	135	110	8/6	425	554	864.3	26	18
OD 2 ½"	63.5 × 1.65	90.0	125.0	122	170	135	8/6	468	597	1,082.0	27	29
OD 3"	76.2 × 1.65	103.0	125.0	113	170	135	8/6	477	606	1,090.5	26	29
OD 4"	101.6 × 2.11	127.5	125.0	125	210	170	8/6	483	612	1,097.3	26	42
OD 6"	152.4 × 2.77	177.0	150.0	185	210	210	10/8	866	995	1,670.0	55	103
IPS 2"	60.3 × 2.00	81.0	114.3	102	135	110	8/6	418	547	856.5	27	19
IPS 3"	88.9 × 2.30	115.0	152.5	119	170	135	8/6	471	600	1,084.5	27	29
IPS 4"	114.3 × 2.30	140.0	152.5	132	210	170	8/6	477	606	1,091.0	27	43
IPS 6"	168.3 × 2.77	192.0	152.5	190	210	210	10/8	810	939	1,614.0	55	100

Please note: The following clearances are required for demounting the additional disc: DN 25 – 50: 50 mm, DN 65 – 100: 80 mm, DN 125 – 150: 110 mm

Position	Description of the order code for the standard version			
1	**Valve type**			
	Y	VARIVENT® double-seat valve		
2	**Housing combinations**			
	W	Y	X	Z
				
	U	M	N	G
				
3	**Supplement to the valve type**			
	L	With lifting actuator and spray cleaning		
	C	With lifting actuator without spray cleaning		
4/5	**Nominal width (upper housing/lower housing)**			
	DN 25	OD 1"		
	DN 40	OD 1 ½"		
	DN 50	OD 2"	IPS 2"	
	DN 65	OD 2 ½"		
	DN 80	OD 3"	IPS 3"	
	DN 100	OD 4"	IPS 4"	
	DN 125			
	DN 150	OD 6"	IPS 6"	
6	**Actuator type**			
	S	Air / Spring		
7	**Non-actuated position**			
	Z	Spring-to-close (NC)		
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**			
	Actuator (spring-to-close)	/ Lifting actuator	For nominal widths	
	BA	/ BLB	DN 25, OD 1"	
	CB	/ BLB	DN 40, DN 50, OD 1 ½", OD 2", IPS 2"	
	DD	/ CLB	DN 65, DN 80, OD 2 ½", OD 3", IPS 3"	
	EF	/ DLB	DN 100, OD 4", IPS 4"	
	SH6	/ EL6	DN 125	
	TK6	/ EL6	DN 150, OD 6", IPS 6"	
9	**Valve seat version**			
	L00	Loose seat ring / Clamp connection		
10	**Seal material in contact with the product**			
	1	EPDM (FDA)		
	2	FKM (FDA)		
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")		
11	**Surface quality of the housing**			
	2	Inside $R_a \leq 0.8$ µm, outside matt blasted		
12	**Connection fittings**			
	N	Welding end		
13	**Accessories**			
	/52	Adhesive ID tag		
+				
14–19	**Air connection / Control and feedback system**			
	00000M	Metric for air hose Ø 6/4 mm		
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)		
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation		

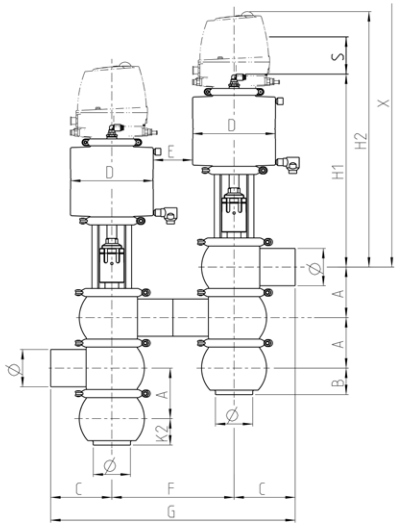
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	Y			-	/	-	S	Z	-		-	L0	-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Flow Diversion Device (FDD) Type X_R





Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Ground
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air / spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Welded seat ring
Marking / Certificates	

	Pipe			Housing		Actuator				Dimensions				Valve
Nominal width	Ø [mm]	A [mm]	C [mm]	K1 [mm]	K2 [mm]	D1 [mm]	E [mm]	F [mm]	G [mm]	H1 [mm]	P [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
OD 1"	25.4 × 1.60	46.0	90	30.0	29	110	70	180	360	456	50	570	–	80
OD 1 ½"	38.1 × 1.60	59.0	90	36.5	39	135	45	180	360	466	60	615	–	80
OD 2"	50.8 × 1.60	71.5	90	43.0	42	135	45	180	360	472	65	650	–	80
OD 2 ½"	63.5 × 1.65	90.0	125	52.0	54	170	80	250	500	515	75	740	17.5	90
OD 3"	76.2 × 1.65	103.0	125	58.5	54	170	80	250	500	522	80	780	18.5	90
OD 4"	101.6 × 2.00	127.5	125	71.0	69	210	40	250	500	530	95	850	40.0	90

Position	Description of the order code for the standard version	
1	**Valve type**	
	X	VARIVENT® divert valve
2	**Housing combinations**	
	W 	K 
3	**Supplement to the valve type**	
	R	Lower radial seal
4/5	**Nominal width (upper housing / lower housing)**	
	OD 1"	
	OD 1 ½"	
	OD 2"	
	OD 2 ½"	
	OD 3"	
	OD 4"	
6	**Actuator type**	
	Z	VARIVENT® Actuator Air/Spring, Air-assisted
7	**Non-actuated position**	
	Z	Spring-to-close (NC)
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**	
	Actuator (spring-to-close)	For nominal widths
	Z/FDD CB	OD 1", OD 1 ½", OD 2"
	Z/FDD DD	OD 2 ½", OD 3"
	Z/FDD EF	OD 4"
9	**Valve seat version**	
	L0	Loose seat ring
10	**Seal material in contact with the product**	
	1	EPDM (FDA)
	2	FKM (FDA)
	3	HNBR (FDA); (up to OD 4")
11	**Surface quality of the housing**	
	3	Inside R_a ≤ 0.8 µm, outside ground
12	**Connection fittings**	
	N	Welding end
13	**Accessories**	
	/52	Adhesive ID tag

	Air connection / Control and feedback system
	▶ TM20FDD-N8B0Z/69k ▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation

The code is composed as following, depending on the chosen configuration:

Position	**1**	**2**	**3**		**4/5**		**6**	**7**		**8**		**9**		**10**	**11**	**12**	**13**	
Code	X		R	-	/	-	Z	Z	-		-	L0	-		3	N	/52	TM20FDD-N8B0Z/69k

For order codes differing from the standard version, please refer to section 8.

6 MIXPROOF SHUT-OFF VALVES FOR CIP AND GAS APPLICATIONS

VARIVENT® Hygienic Seat Valves



Overview

VARIVENT® double-seat valves type K and VARIVENT® double-seal valves type C are used for mixproof shut-off of incompatible products at the pipe junctions in CIP or gas applications.

Special features
Certified, hygienic configuration
Metallic stop
Flexibility because of the modular principle
Proven seal geometry
Mixproof separation
Availability of different valve configurations





Overview

Application examples
VARIVENT® double-seal valve type C and double-seat valve type K are predominantly used in areas where hygiene is not critical, e.g. CIP systems and gas blocks (brewery).

Mixproof separation
VARIVENT® mixproof valves type C and K are used as economic alternatives for mixproof separation of incompatible products at pipeline junctions within CIP systems or gas blocks.

When the valve is closed (non-actuated position), there are always two seals between the separated pipelines. If one seal fails, the resulting leakage will be directed through the leakage outlet into the periphery, without mixing with the product in the second pipeline.

VARIVENT®
The VARIVENT® modular system has many available versions for optimizing the valves in the process system. Please refer to the options section (section 8) for information about these.

Sizes	
Double-seal valves type C	Double-seat valves type K
DN 25 – DN 150	DN 25 – DN 150
OD 1" – OD 6"	OD 1" – OD 6"
	IPS 2" – IPS 6"

The valve types

Valve type K represents a typical double-seat valve with two independent valve discs in which these two seals are located.

Valve type C is a double-seal valve in which these two seals are located in one valve disc together with the leakage chamber in between them.

In both versions, two seals prevent any mixture between two different medias.

Recommended flow direction

To avoid water hammers when closing the valve while the product is flowing, mixproof shut-off valves should be switched against the flow direction of the product. That means, for VARIVENT® mixproof valves type C and K, the recommended flow direction of the product is from the lower to the upper housing,



Double-seat valve type K



Double-seal valve type C

Overview

Cleaning the leakage chamber

Double-seal valve type C

In the standard version, two flush valves are connected to the leakage chamber between the two valve disc seals. One flush valve is always used for the leakage outlet, while the second flush valve is in contact with cleaning media through an cleaning connection, in order to clean the leakage chamber.

In this case, it is necessary to have a supply valve connected in the periphery to supply the flush valve with cleaning media on time.

Cleaning takes place while the main valve is closed, which means the seal surfaces of the valve disc seals that are in contact are not rinsed.

Double-seat valve type K

The double-seat valve type K does have neither an external spraying connection nor a lifting actuator. The leakage chamber is flushed by the fluid that flow out from the leakage chamber as a result of the switching leakage during the main stroke. For this reason, the valve is not suitable for use in hygienic areas.

The advantages of the valve type K are its slightly increased safety against water hammers that could occur in the lower pipeline, as well as having a wider selection of available housing combinations.



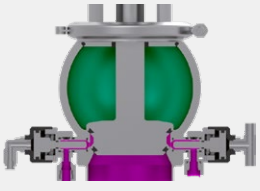
Valve closed,
leakage detection
via flush valves



Valve open,
flush valves closed



Arrangement
of the flush valves



Cleaning of the
leakage chamber

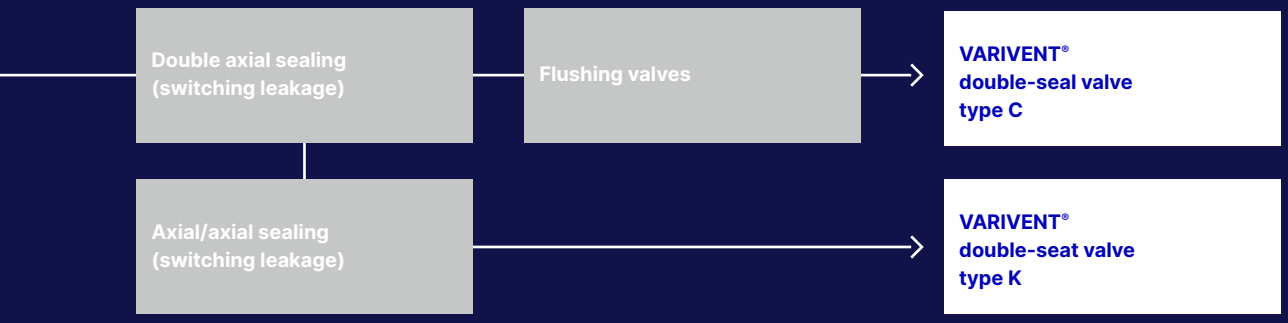


Switching leakage

Selection Matrix

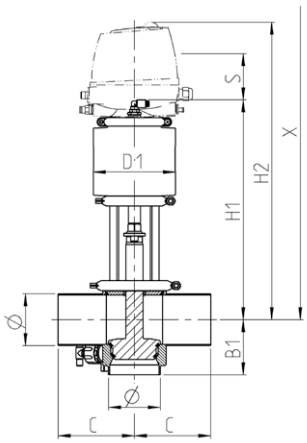
Mixproof valves

CIP and gas block systems


Double axial sealing (switching leakage)
Flushing valves
VARIVENT® double-seal valve type C
Axial/axial sealing (switching leakage)
VARIVENT® double-seat valve type K

VARIVENT® Type C
Double-seal Valve





Technical data of the standard version

Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Fixed vertical port
Marking / Certificates	CE FDA

	Pipe	Housing		Actuator	Flush valve hose (PTFE)	Dimensions			Valve
Nominal width	Ø [mm]	B1 [mm]	C [mm]	D1 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	58	90	99	8/6	294	423	528	16	8
DN 40	41.0 × 1.50	64	90	110	8/6	338	467	572	14	10
DN 50	53.0 × 1.50	70	90	110	8/6	341	470	575	26	10
DN 65	70.0 × 2.00	83	125	135	8/6	352	481	656	30	15
DN 80	85.0 × 2.00	91	125	135	8/6	360	489	664	30	16
DN 100	104.0 × 2.00	100	125	170	8/6	399	528	703	30	23
DN 125	129.0 × 2.00	113	150	260	8/6	555	684	914	60	49
DN 150	154.0 × 2.00	125	150	260	8/6	579	708	938	60	55
OD 1"	25.4 × 1.65	56	90	135	8/6	292	421	526	12	8
OD 1 ½"	38.1 × 1.65	63	90	135	8/6	337	466	571	14	10
OD 2"	50.8 × 1.65	69	90	135	8/6	343	472	577	27	10
OD 2 ½"	63.5 × 1.65	80	125	170	8/6	356	485	660	31	15
OD 3"	76.2 × 1.65	87	125	170	8/6	363	492	667	29	15
OD 4"	101.6 × 2.11	99	125	170	8/6	401	530	705	30	22
OD 6"*	152.4 × 2.77	124	150	260	8/6	578	707	907	57	55

* only available for FKM

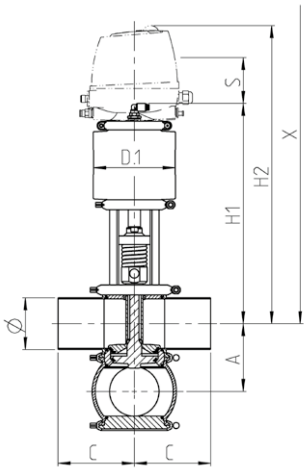
Position	Description of the order code for the standard version	
1	**Valve type**	
	C	VARIVENT® double-seal valve
2	**Housing combinations**	
	L 	T 
3	**Supplement to the valve type**	
	Reserved for options	
4/5	**Nominal width (upper housing/lower housing)**	
	DN 25	OD 1"
	DN 40	OD 1 ½"
	DN 50	OD 2"
	DN 65	OD 2 ½"
	DN 80	OD 3"
	DN 100	OD 4"
	DN 125	
	DN 150	
6	**Actuator type**	
	S	Air / Spring
7	**Non-actuated position**	
	Z	Spring-to-close (NC)
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**	
	Actuator (spring-to-close)	For nominal widths
	AA	DN 25, OD 1"
	BB	DN 40, DN 50, OD 1 ½", OD 2"
	CD	DN 65, DN 80, OD 2 ½", OD 3"
	DF	DN 100, OD 4"
	SH6	DN 125
	SK6	DN 150
9	**Valve seat version**	
	V0	Fixed vertical port
10	**Seal material in contact with the product**	
	1	EPDM (FDA)
	2	FKM (FDA)
	3	HNBR (FDA); (up to DN 100, OD 4")
11	**Surface quality of the housing**	
	2	Inside R_a ≤ 0.8 µm, outside matt blasted
12	**Connection fittings**	
	N	Welding end
13	**Accessories**	
	/ 52	Adhesive ID tag
	/C	Flush valves, plastic, up to 80 °C
	/C-S	Flush valves, stainless steel, over 80 °C
+		
14–19	**Air connection / Control and feedback system**	
	00000M	Metric for air hose Ø 6/4 mm
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation

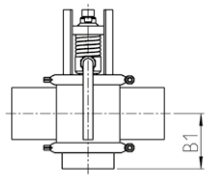
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19					
Code	C			-	/	-	S	Z	-		-	V0	-		2	N	/52	/C	+						

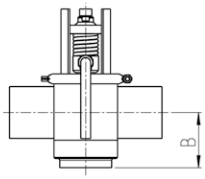
For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type K
Double-seat Valve

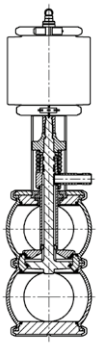




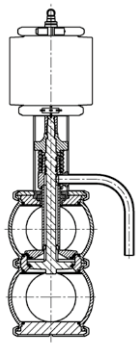
Loose seat ring



Fixed vertical port



Straight leakage pipe



90° leakage pipe



Technical data of the standard version

Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped or welded seat ring
Marking / Certificates	CE FDA

	Pipe			Housing	Actuator	Dimensions			Valve	
Nominal width	Ø [mm]	A [mm]	B [mm]	B1 [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	50.0	58.0	58.0	90.0	135	329	458	563	22	9
DN 40	41.0 × 1.50	62.0	64.0	64.0	90.0	135	338	467	572	25	11
DN 50	53.0 × 1.50	74.0	70.0	70.0	90.0	135	341	470	575	30	11
DN 65	70.0 × 2.00	96.0	83.0	83.0	125.0	170	382	511	686	30	18
DN 80	85.0 × 2.00	111.0	90.5	90.5	125.0	170	400	529	704	40	18
DN 100	104.0 × 2.00	130.0	100.0	100.0	125.0	170	409	538	713	40	26
DN 125	129.0 × 2.00	155.0	112.5	112.5	150.0	210	555	684	914	60	57
DN 150	154.0 × 2.00	180.0	125.0	125.0	150.0	210	661	790	1,020	60	65
OD 1"	25.4 × 1.65	46.0	56.0	56.0	90.0	135	327	456	561	18	9
OD 1 ½"	38.1 × 1.65	59.0	62.5	62.5	90.0	135	337	466	571	22	11
OD 2"	50.8 × 1.65	71.5	69.0	69.0	90.0	135	343	472	577	30	11
OD 2 ½"	63.5 × 1.65	90.0	80.0	80.0	125.0	170	386	515	690	30	17
OD 3"	76.2 × 1.65	103.0	86.5	86.5	125.0	170	403	532	707	39	18
OD 4"	101.6 × 2.11	127.5	99.0	99.0	125.0	170	411	540	715	40	26
OD 6"	152.4 × 2.77	177.0	123.5	123.5	150.0	210	660	789	1,019	60	66
IPS 2"	60.3 × 2.00	81.0	73.5	73.5	114.3	135	345	474	579	29	12
IPS 3"	88.9 × 2.30	115.0	92.5	92.5	152.5	170	402	531	706	40	19
IPS 4"	114.3 × 2.30	140.0	105.0	105.0	152.5	170	414	543	718	40	27
IPS 6"	168.3 × 2.77	192.0	131.0	131.0	152.5	210	655	784	1,014	60	67

Position	Description of the order code for the standard version							
1	**Valve type**							
	K	VARIVENT® double-seat valve						
2	**Housing combinations**							
	A	B	C	E	L	T		
								
3	**Supplement to the valve type**							
	Reserved for options							
4/5	**Nominal width (upper housing/lower housing)**							
	DN 25	OD 1"						
	DN 40	OD 1 ½"						
	DN 50	OD 2"	IPS 2"					
	DN 65	OD 2 ½"						
	DN 80	OD 3"	IPS 3"					
	DN 100	OD 4"	IPS 4"					
	DN 125							
	DN 150	OD 6"	IPS 6"					
6	**Actuator type**							
	S	Air / Spring						
7	**Non-actuated position**							
	Z	Spring-to-close (NC)						
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**							
	Actuator (spring-to-close)	For nominal widths						
	AA	DN 25, OD 1"						
	BB	DN 40, DN 50, OD 1 ½", OD 2", IPS 2"						
	CD	DN 65, DN 80, OD 2 ½", OD 3", IPS 3"						
	DF	DN 100, OD 4", IPS 4"						
	SH6	DN 125						
	SK6	DN 150, OD 6", IPS 6"						
9	**Valve seat version**		Housing combination					
			A	B	C	E	L	T
	L0	Loose seat ring / Clamp connection	•	•	•	•	•	•
	V0	Welded seat ring / Port orientation 0° or fixed vertical port	•	•	•	•		
	V1	Welded seat ring / Port orientation 90°	•	•	•	•		
	V2	Welded seat ring / Port orientation 180°		•				
	V3	Welded seat ring / Port orientation 270°		•				
10	**Seal material in contact with the product**							
	1	EPDM (FDA)						
	2	FKM (FDA)						
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")						
11	**Surface quality of the housing**							
	2	Inside R_a ≤ 0.8 µm, outside matt blasted						
12	**Connection fittings**							
	N	Welding end						
13	**Accessories**							
	/52	Adhesive ID tag						
	/ K1	Straight leakage pipe						
	/ K2	90° leakage pipe						
+								
14–19	**Air connection / Control and feedback system**							
	00000M	Metric for air hose Ø 6/4 mm						
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)						
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation						

The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19						
Code	K			-	/	-	S	Z	-		-		-		2	N	/52		+							

For order codes differing from the standard version, please refer to section 8.

7 TANK BOTTOM VALVES

VARIVENT® Hygienic Seat Valves



Overview

VARIVENT® tank bottom valves are used for shutting off pipelines at tanks or containers. Various housing connections can be welded directly into the tank bottom, flush mounted into the tank bottom wall.

Special features
Certified, hygienic configuration
Metallic stop
Flexibility because of the modular principle
Proven seal geometry
Mixproof separation
Availability of different valve configurations



Overview of Single-seat and Double-seat Bottom Valves


ECO-MATRIX™

VARIVENT®
The VARIVENT® modular system has many options available. Please refer to the options section (section 8) for information about these.

Sizes
Tank bottom valves
DN 25 – DN 150
OD 1" – OD 6"
IPS 2" – IPS 6"

Application examples
Single-seat tank shut-off valves with only one sealing (either axial or radial) between the tank and pipeline as well as mix-proof radial sealing tank bottom valves are available.

Single-seat tank shut-off valves are used if the tank is operated with separate filling and emptying lines. It is not possible to clean the pipeline while the tank is in process.

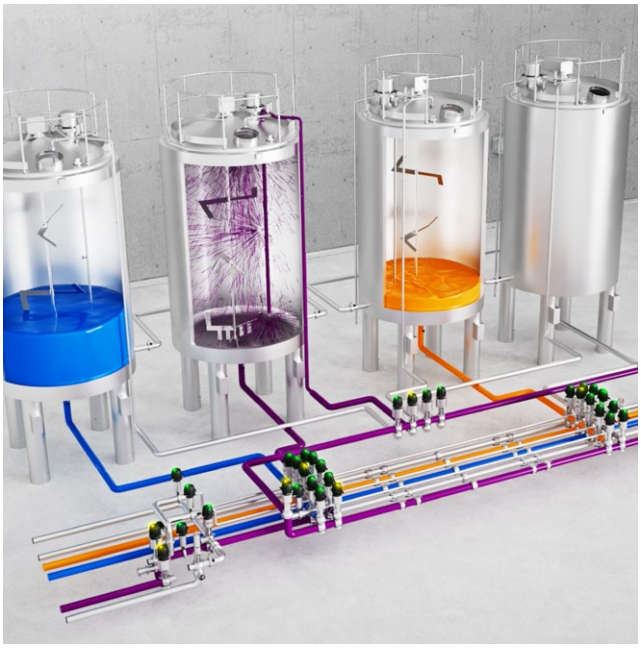
Mixproof tank shut-off valves are used if the tank is operated with common filling and emptying lines. Mixproof separation between the pipeline and the inside of the tank allows the pipework to be cleaned while the process in the tank continues.

Double-seat bottom valves are typically installed in suspended position. The valves separate the process in the tank from the supply to the downstream valve matrix, so that the tanks can be filled, emptied and cleaned flexibly and in parallel.

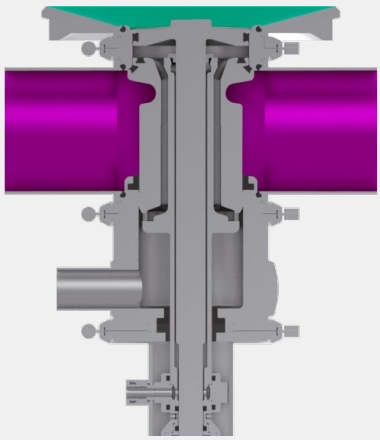
Nowadays, mixproof tank shut-off valves are increasingly installed in horizontal position:
- Valve type T is horizontally mounted on a special connection unit directly below the tank as ECO-MATRIX™. The process lines do not converge in a valve matrix, but are routed directly underneath the tank to save space.
- Valve type 24/7 PMO MT is mounted flush with the tank wall with an appropriate housing connection.

Maintenance
In order to be able to service the valve insert when servicing a single-seat axial sealing type U shut-off valve, the valve disc must be removed from the pipework through the tank or together with the housing. For this reason, it is recommended to provide a detachable connection, e.g. a VARIVENT® flange connection, on the respective housings or in the connected pipework.

The design of the radially sealing shut-off valve type U_R is characterised by low maintenance requirements. The valve disc with its radial seal can be easily removed upwards through the seat ring.



Mixproof separation
When the valve is closed (non-actuated position), there are always two seals between the two fluids in the mixproof variant. If one seal is defective, the resulting leakage can be deliberately channelled out of the leakage housing into the periphery. This method enables that there cannot be any mixture between a tank and a pipeline.



Mixproof separation
by two seals

Overview of Single-seat and Double-seat Bottom Valves

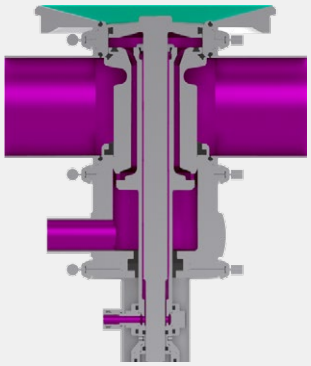
Cleaning the leakage chamber
The VARIVENT® modular system offers double-seat valves with several cleaning options allowing selecting the optimal solution depending on the used media.

Spray cleaning
This kind of leakage chamber cleaning is typically used for fluid media which are easily flushable and do not stick to the seal surfaces or possibly crystallize. All systems related to the cleaning of the valve should regularly be used to ensure an optimal cleaning result and to prevent damages of the valve.

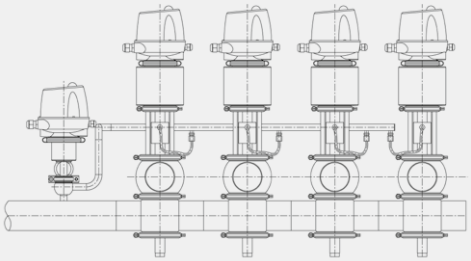
An integrated spray nozzle in the double seat distributes the cleaning medium through the double disc into the leakage chamber. The cleaning medium is supplied via an external cleaning connection located at the height of the lantern. It flows unpressurised through the leakage outlet into the periphery. Cleaning is carried out when the valve is in closed position. Therefore, the leakage chamber can be cleaned independently of pipe cleaning. Product can flow in both pipes during spray cleaning. Intermediate flushing is possible before or after switching the valve. As the valve is in closed position for spray cleaning, the sealing surfaces in contact with the seat ring are not rinsed during cleaning.

Necessary periphery for spray cleaning
As spray cleaning requires external supply of cleaning media via the external cleaning connection located at the height of the lantern, feed valves in the periphery are necessary to channel cleaning media to the cleaning connection on time.

Feed valves with a relatively small nominal diameter are used on the pipe that carries the cleaning medium. Each feed valve usually supplies several cleaning connections of double-seat valves. All connected double-seat valves must be adequately supplied with cleaning medium during cleaning.



Spray cleaning with tank bottom valve



Application example of a feed valve

Lifting actuator

This kind of leakage chamber cleaning is typically used for sensitive media which also require cleaning of the seal surfaces to rinse possible adhering microorganisms. It can also be used for adhering and crystalizing media.

The lifting actuator allows separate lifting of each valve disc. The leakage chamber is cleaned during pipe cleaning via lifting the upper or lower valve disc. Cleaning medium passes the seal of the lifted valve disc, cleans the leakage chamber, and flows unpressurized through the leakage outlet into the periphery. As such, all surfaces in contact with the cleaning medium are rinsed, including the surfaces of the valve disc seals. Cleaning is only possible during pipe cleaning.

Double valve discs are lifted into the valve housining of mixproof tank bottom valves, while the valve discs are lifted into the tank.

Lifting actuator and spray cleaning

This kind of cleaning is typically used for critical media which are highly adhesive, easily crystallize and are sticky (e.g., sugar solutions) or viscous (e.g., yoghurt).

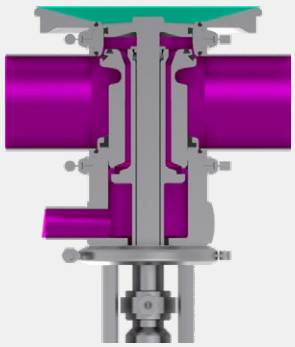
The lifting actuator allows cleaning the leakage chamber and valve discs seals during pipe cleaning whereas spray cleaning allows intermediate cleaning of the leakage chamber during production. Short intermediate cleaning is often done after each switching process.

Divisible lift actuator

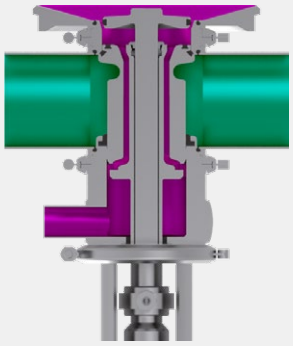
The divisible lift actuator is intended for 24/7 PMO tank bottom valves type MT that are mounted horizontally with the tank wall. It allows a more controlled cleaning of the valve disc (disk on the right).

The classic variant of cleaning the valve disc (disk on the right) by lifting it towards the tank is not ideal due to the horizontally, flush mounted position of the valve and cleaning medium flow from the tank with low pressure.

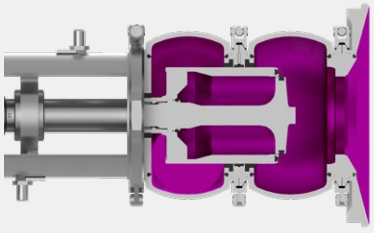
The divisible lift actuator allows the double valve disc (disk on the left) to be lifted away from the tank when the valve is in the open position, thereby exposing the valve disc (disk on the right) and leakage chamber. Thus, not only is the valve disc (disk on the right) cleaned under pressure in a more controlled manner than in the classic variant, but all wetted parts are cleaned at the same time. Cleaning medium rinses all surfaces and seals of both valve discs as well as the leakage chamber. It then flows unpressurized through the leakage housing into the periphery.



If there is cleaning media in the pipeline, the lower valve disc (double disc lift) can be lifted into the pipeline to allow the surface of the seal and the leakage chamber to be cleaned.

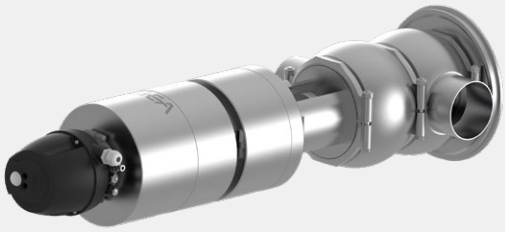


The upper valve disc (valve disc lift) of the bottom valve can be lifted in the direction of the tank. This makes it possible to clean the seal surfaces and the leakage chamber. For this purpose, the liquid should be stored in advance at an adequate level in the tank.



The 24/7 PMO tank bottom valve type MT is in the open position, and then the upper valve disc is lifted allowing cleaning of all wetted parts at the same time.

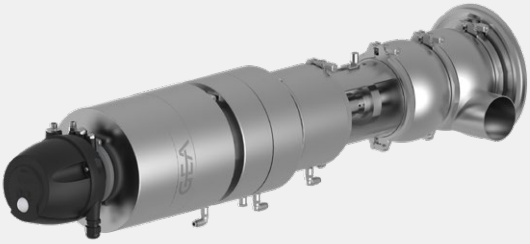
Overview of Single-seat and Double-seat Bottom Valves



VARIVENT® 24/7 PMO Tank Valve type MT with lifting actuator

VARIVENT® 24/7 PMO Tank Bottom Valve
The VARIVENT® 24/7 PMO Tank Valve type MT is the first tank valve to be authorized by the FDA (under Memorandum M-b-359) to implement seat lifting cleaning while product is present in one housing of the valve – saving even more time, money and production downtime for US dairy plants.

Like the VARIVENT® 24/7 PMO Valve type M/2.0 and VARIVENT® 24/7 PMO Cheese Curd Valve type M_C/2.0, using simple geometry andensures no CIP impingement on the opposite seat during seat lift cleaning. These two design features ensure that there can never be any cross-leakage of CIP liquid into the opposite valve housing during seat lifting.



VARIVENT® 24/7 PMO Tank Valve type MT with lifting and divisible actuator

Intended for the VARIVENT® 24/7 PMO Tank Valve type MT in horizontal mounting position, the divisible lift actuator allows a more controlled cleaning of the lower valve disc than by seat lift cleaning only.

Special features
Compact design: Completely drainable in horizontal or upside-down positions, saving floor space
Greatly simplified vessel pipework: Can be connected to the silo or vat
Increased process flexibility and reduced production downtime: Allows the vessel inlet/outlet header to be cleaned while product is present in the vessel

VARIVENT® housing connection flange type T and T-S

The housing connection flanges type T and T-S serve to adapt VARIVENT® and ECOVENT® tank bottom valves free of dead zones to vessels. The connection flanges are designed for installation into vessels of a wall thickness up to 8 mm and are welded into the tank or vessel wall flush from the inside.

The housing connection flange type T is best suited for insertion in the cone or dished bottom. Welding into the vessel wall is also possible with larger vessels. Due to its cylindrical shape, the housing connection flange of type T-S allows adjustment to the inclination or curve of the vessel bottom or vessel wall and is thus suitable for installation in tanks with smaller diameters.



Type T
The conical inner contour permits a flat installation orientation



Type T-S
Cylindrical shape for adaptability to eccentric positions

VARIVENT® housing connection flange type U and U-S

The housing connection flange type U is used to adapt VARIVENT® and ECOVENT® tank bottom valves to vessels. Preferably, the flange is welded into the tank or vessel wall front-flush, centrally in the cone or dished bottom or in extrusions with a wall thickness of up to 4 mm.

The housing connection flange type U-S is used for vertical holding of a seat valve free of dead zones. Its cylindrical shape allows the adjustment to the inclination of the cone or dished bottom and therefore allows for vertical installation of VARIVENT® and ECOVENT® tank bottom valves outside the center vessel bottom. The housing connection flanges type U-S are particularly suitable for installation of components at jacketed tanks due to their cylindrical form.



Type U
The design of the inner contour permits flat installation orientations



Type U-S
Cylindrical shape permits adjustment to the inner tank contours

VARIVENT® housing connection flanges type MN, MG and MS

The housing connection flanges types MG and MN are designed to adapt VARIVENT® 24/7 PMO Tank Valve type MT to the bottom or wall of vessels. A recess (MG) or groove (MN)in the connection allows the cleaning medium to flow into the leakage chamber of the valve when the valve disk is lifted towards the tank.

The housing connection flange type MS can only be used to adapt VARIVENT® 24/7 PMO Tank Valve type MT with lift and divisible lift actuator to the bottom of vessels. As these valves do not need a seat lift towards the tank, the connection has a smooth design on the inside and ensures that the tank can be completely emptied. VARIVENT® housing connection flanges of type MN, MG, and MS are supplied with a protective ring to shield the seat area during the grinding process after welding.



Type MG



Type MN



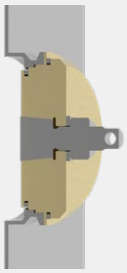
Type MS

VARIVENT®
Housing Connection Flanges

The VARIVENT® housing connection flanges are welded into the vessel wall or the vessel bottom with a welding jig to protect against distortion. Since the different heat introduction when welding may cause deformation of the flanges and thereby leaks, the flange with the installed welding jig must be allowed to cool off to 30 °C. All conditions required for welding (such as insert gas, cooling, welding additive) can be taken from the respective welding instructions.

VARIVENT® housing connection U and U-S





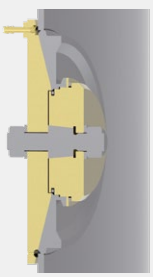
	VARIVENT® housing connection type U		
Nominal width of valve	Welding device		Welding instructions
	Part number	For rent	
DN 25	229-104.91	229-104.97	221RLI002533EN
DN 50/40	229-104.92	229-104.98	221RLI002533EN
DN 80/65	229-104.93	229-104.99	221RLI002533EN
DN 100	229-104.94	229-104.100	221RLI002533EN
DN 125	229-104.95	229-104.101	221RLI002533EN
DN 150	229-104.96	229-104.102	221RLI002533EN

	VARIVENT® housing connection type U-S		
Nominal width of valve	Welding device		Welding instructions
	Part number	For rent	
DN 25	229-104.91	229-104.97	221RLI013845EN
DN 50/40	229-104.92	229-104.98	221RLI013845EN
DN 80/65	229-104.93	229-104.99	221RLI013845EN
DN 100	229-104.94	229-104.100	221RLI013845EN
DN 125	229-104.95	229-104.101	221RLI013845EN
DN 150	229-104.96	229-104.102	221RLI013845EN

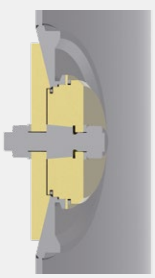
VARIVENT® housing connection T and T-S

The welding jig and the welding instructions are requiered for stress-free installation. The welding jigs are also available for rent.





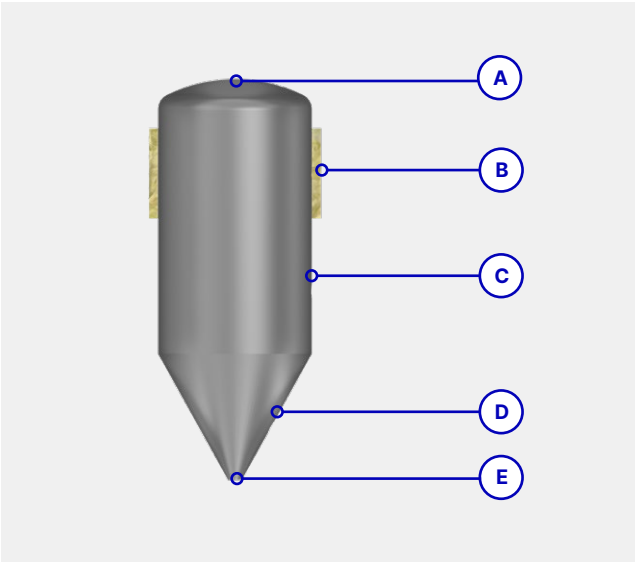
Outer weld with insert gas connection inside



Inner weld

VARIVENT® housing connection type T			
Nominal width of valve	Welding device		Welding instructions
	Part number	For rent	
DN 25	229-104.01	229-104.25	221RLI003025EN
DN 50/40	229-104.07	229-104.26	221RLI003025EN
DN 80/65	229-104.13	229-104.27	221RLI003025EN
DN 100	229-104.19	229-104.28	221RLI003025EN

VARIVENT® housing connection type T-S			
Nominal width of valve	Welding device		Welding instructions
	Part number	For rent	
DN 25	229-104.29	229-104.80	221RLI013844EN
DN 50/40	229-104.30	229-104.81	221RLI013844EN
DN 80/65	229-104.31	229-104.82	221RLI013844EN
DN 100	229-104.32	229-104.83	221RLI013844EN



Installation position

Depending on the installation situation there are different housing connection flanges that allow the adaption of VARIVENT® and ECOVENT® tank bottom valves in a wide variety of positions.

	Suitable connection or tank flange			
Installation position at the tank	Type U	Type U-S	Type T	Type T-S
A		•	•	•
B		•		•
C		•	•	•
D			•	•*
E	•		•	

* In this installation position, there may be slight accumulations of liquid.

The different connection positions on the tank make it necessary to adapt the contour of the welded joint from the inside of the tank. The housing connections U-S and T-S were developed for installation in tanks with smaller diameter or insulated tanks.

Please refer to the tables below for the minmum tank diameter required for the adaption.

VARIVENT® Housing connection type U

		Minimum tank diameter		
Nominal width of the valve		Wall thickness tank [mm]		
		2	3	4
DN 25	OD 1"	500	500	500
DN 50 / 40	OD 1½"/ 2"	750	750	750
DN 65 / 80	OD 2½"/ 3"	1,100	1,100	1,100
DN 100	OD 4"	2,000	2,000	2,000
DN 125	–	2,850	2,850	2,850
DN 150	OD 6"	3,750	3,750	3,750

VARIVENT® Housing connection type U-S

		Minimum tank diameter		
Nominal width of the valve		Wall thickness tank [mm]		
		2	3	4
DN 25	OD 1"	110	110	110
DN 50 / 40	OD 1½"/ 2"	130	130	130
DN 65 / 80	OD 2½"/ 3"	170	170	170
DN 100	OD 4"	240	240	240
DN 125	–	360	370	380
DN 150	OD 6"	460	475	490

VARIVENT® Housing connection type T

		Minimum tank diameter						
Nominal width of the valve		Wall thickness tank [mm]						
		2	3	4	5	6	7	8
DN 25	OD 1"	950	1,150	1,450	1,950	3,050	3,050*	3,050*
DN 50 / 40	OD 1½"/ 2"	1,200	1,450	1,850	2,500	3,900	3,900*	3,900*
DN 65 / 80	OD 2½"/ 3"	1,800	2,150	2,700	3,700	5,750	5,750*	5,750*
DN 100	OD 4"	2,250	2,700	3,400	4,650	7,250	7,250*	7,250*

* 0,5 –1 mm overlap at critical welding area

VARIVENT® Housing connection type T-S

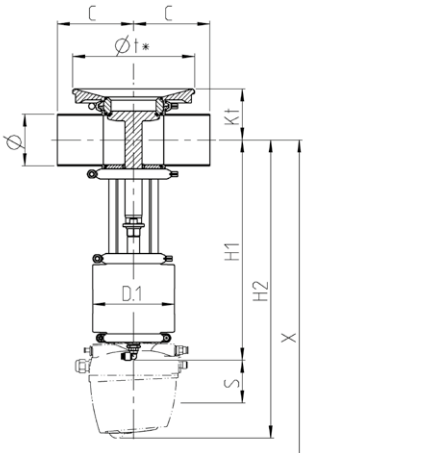
		Minimum tank diameter						
Nominal width of the valve		Wall thickness tank [mm]						
		2	3	4	5	6	7	8
DN 25	OD 1"	290	300	310	320	330	350	370
DN 50 / 40	OD 1½"/ 2"	360	370	380	400	420	440	460
DN 65 / 80	OD 2½"/ 3"	500	520	540	570	600	630	660
DN 100	OD 4"	620	650	680	710	740	780	830

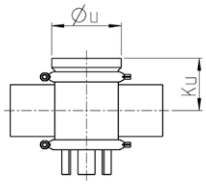
Selection Matrix



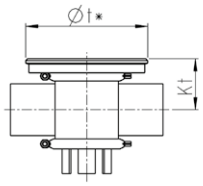

Tank emptying
VARIVENT®
single-seat bottom valve
type N
1
Tank emptying
Compact design
ECOVENT®
single-seat bottom valve
type N / ECO
2
Tank emptying
Viscous products
or products with
large particles
VARIVENT®
single-seat long-stroke
bottom valve
type N_V
3
Tank filling
VARIVENT®
single-seat bottom valve
type U
4
Tank filling
Optimized maintenance
with radial sealing
VARIVENT®
radial sealing single-seat
bottom valve
type U_R
5
Tank filling
Viscous products
or products with
large particles
VARIVENT®
single-seat long-stroke
bottom valve
type U_V
6
Axial/radial sealing
VARIVENT®
radial sealing double-seat
bottom valve
type T_R
7
Seat lifting
VARIVENT®
radial sealing double-seat
bottom valve
type T_RL, T_RC
8
Seat lifting
VARIVENT®
radial sealing double-seat
bottom valve
type T_RC DN 25 / OD 1"
Radial sealing
Seat lifting
VARIVENT®
24/7 PMO double-seat
bottom valve
type MT_C, MT_L
Seat lifting and
divisible lifting
VARIVENT®
24/7 PMO double-seat
bottom valve
type MT_T, MT_U

VARIVENT® Type N
Single-seat Bottom Valve

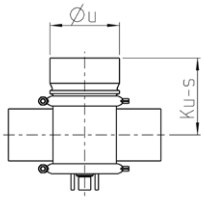




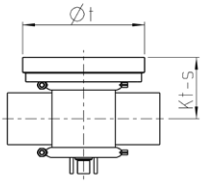
Housing connection U



Housing connection T



Housing connection U-S



Housing connection T-S



Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring
Marking / Certificates	CE, EHEDG, FDA

* Optionally with housing connection flange U or housing connection flange T (see position 13)

	Pipe	Housing	Actuator			Dimensions	Housing connection U and U-S			Housing connection T and T-S			Valve	
Nominal width	Ø [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Ku [mm]	Ku-s [mm]	Øu [mm]	Kt [mm]	Kt-s [mm]	Øt* [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	90.0	99	294	423	623	50.0	90.0	70 × 2.0	49.0	66.0	145	16	7
DN 40	41.0 × 1.50	90.0	110	335	464	664	56.0	96.0	85 × 2.0	55.5	72.0	165	18	9
DN 50	53.0 × 1.50	90.0	110	341	470	670	62.0	102.0	85 × 2.0	61.5	78.0	165	30	9
DN 65	70.0 × 2.00	125.0	135	352	481	711	78.0	118.0	114 × 2.5	76.0	83.0	200	30	14
DN 80	85.0 × 2.00	125.0	135	360	489	719	85.5	125.5	114 × 2.5	83.5	100.5	200	30	15
DN 100	104.0 × 2.00	125.0	170	399	528	778	95.0	135.0	154 × 2.0	92.5	110.0	225	30	21
DN 125	129.0 × 2.00	150.0	260	555	684	984	107.5	147.5	184 × 3.0	–	–	–	60	48
DN 150	154.0 × 2.00	150.0	260	579	708	1,008	120.0	160.0	212 × 4.0	–	–	–	60	53
OD 1"	25.4 × 1.65	90.0	99	292	421	621	48.0	88.0	70 × 2.0	47.0	64.0	145	12	7
OD 1 ½"	38.1 × 1.65	90.0	110	337	466	666	54.5	94.5	85 × 2.0	54.0	70.5	165	18	9
OD 2"	50.8 × 1.65	90.0	110	343	472	672	60.8	100.8	85 × 2.0	60.3	76.8	165	30	9
OD 2 ½"	63.5 × 1.65	125.0	135	356	485	715	75.0	115.0	114 × 2.5	73.0	90.0	200	31	14
OD 3"	76.2 × 1.65	125.0	135	363	492	722	81.5	121.5	114 × 2.5	79.5	86.5	200	29	14
OD 4"	101.6 × 2.11	125.0	170	401	530	780	93.8	133.8	154 × 2.0	91.3	108.8	225	30	21
OD 6"	152.4 × 2.77	150.0	260	578	707	1,007	118.5	158.5	212 × 4.0	–	–	–	60	54
IPS 2"	60.3 × 2.00	114.3	110	338	467	667	65.5	105.5	85 × 2.0	65.0	81.5	165	30	10
IPS 3"	88.9 × 2.30	152.5	135	358	487	717	87.5	127.5	114 × 2.5	85.5	102.5	200	30	15
IPS 4"	114.3 × 2.30	152.5	170	394	523	773	100.0	140.0	154 × 2.0	97.5	115.0	225	30	22
IPS 6"	168.3 × 2.77	152.5	260	573	702	1,002	126.0	166.0	212 × 4.0	–	–	–	60	54

* The maximum wall thickness of the tank can be 8 mm.

Position	Description of the order code for the standard version			
1	**Valve type**			
	N	VARIVENT® single-seat bottom valve		
2	**Housing combinations**			
	F* 	D* 		
3	**Supplement to the valve type**			
	Reserved for options			
4/5	**Nominal width (upper housing/lower housing)**			
	DN 25	OD 1"		
	DN 40	OD 1 ½"		
	DN 50	OD 2"	IPS 2"	
	DN 65	OD 2 ½"		
	DN 80	OD 3"	IPS 3"	
	DN 100	OD 4"	IPS 4"	
	DN 125			
	DN 150	OD 6"	IPS 6"	
6	**Actuator type**			
	S	Air / Spring		
7	**Non-actuated position**			
	Z	Spring-to-close (NC)		
	A	Spring-to-open (NO)		
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**			
	Actuator (spring-to-close)		Actuator (spring-to-open)	For nominal widths
	AA		AA	DN 25, OD 1"
	BB		BA	DN 40, DN 50, OD 1 ½", OD 2", IPS 2"
	CD		CB	DN 65, DN 80, OD 2 ½", OD 3", IPS 3"
	DF		DD	DN 100, OD 4", IPS 4"
	SH6		EF6	DN 125
	SK6		SG6	DN 150, OD 6", IPS 6"
9	**Valve seat version**			
	L0	Loose seat ring / Clamp connection		
10	**Seal material in contact with the product**			
	1	EPDM (FDA)		
	2	FKM (FDA)		
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")		
11	**Surface quality of the housing**			
	2	Inside R_a ≤ 0.8 µm, outside matt blasted		
12	**Connection fittings**			
	N	Welding end		
13	**Accessories**			
	T	Housing connection T (up to DN 100, OD 4", IPS 4")		
	T-S	Housing connection T-S (up to DN 100, OD 4", IPS 4")		
	U	Housing connection U		
	U-S	Housing connection U-S		
	/52	Adhesive ID tag		
+				
14–19	**Air connection / Control and feedback system**			
	00000M	Metric for air hose Ø 6/4 mm		
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)		
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation		

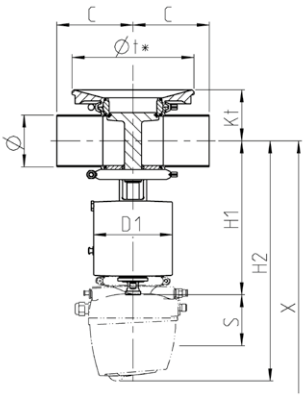
* Selection of possible housing connection see position 13

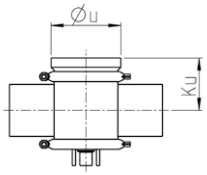
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19						
Code	N			-	/	-	S		-		-	L0	-		2	N		/52	+							

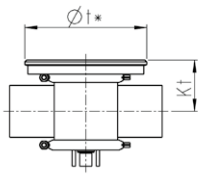
For order codes differing from the standard version, please refer to section 8.

ECOVENT® Type N/ECO
Single-seat Bottom Valve

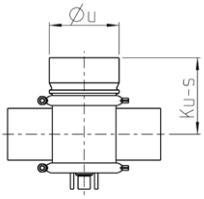




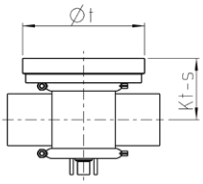
Housing connection U



Housing connection T



Housing connection U-S



Housing connection T-S



Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring
Marking / Certificates	CE FDA

* Optionally with housing connection flange U or housing connection flange T (see position 13)

	Pipe	Housing	Actuator	Dimensions			Housing connection U and U-S			Housing connection T and T-S			Valve	
Nominal width	Ø [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Ku [mm]	Ku-s [mm]	Øu [mm]	Kt [mm]	Kt-s [mm]	Øt* [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	90	85	209	338	623	50.0	90.0	70 × 2.0	49.0	66.0	145	16.0	6
DN 40	41.0 × 1.50	90	104	243	372	664	56.0	96.0	85 × 2.0	55.5	72.0	165	20.0	7
DN 50	53.0 × 1.50	90	104	249	378	670	62.0	102.0	85 × 2.0	61.5	78.0	165	28.0	8
DN 65	70.0 × 2.00	125	129	257	386	711	78.0	118.0	114 × 2.5	76.0	83.0	200	28.0	12
DN 80	85.0 × 2.00	125	129	264	393	719	85.5	125.5	114 × 2.5	83.5	100.5	200	28.0	12
DN 100	104.0 × 2.00	125	170	274	403	778	95.0	135.0	154 × 2.0	92.5	110.0	225	28.0	17
OD 1"	25.4 × 1.65	90	85	207	336	621	48.0	88.0	70 × 2.0	47.0	64.0	145	12.0	6
OD 1 ½"	38.1 × 1.65	90	104	241	370	666	54.5	94.5	85 × 2.0	54.0	70.5	165	17.0	7
OD 2"	50.8 × 1.65	90	104	248	377	672	60.8	100.8	85 × 2.0	60.3	76.8	165	25.5	7
OD 2 ½"	63.5 × 1.65	125	129	254	383	715	75.0	115.0	114 × 2.5	73.0	90.0	200	22.0	11
OD 3"	76.2 × 1.65	125	129	260	389	722	81.5	121.5	114 × 2.5	79.5	86.5	200	20.0	12
OD 4"	101.6 × 2.11	125	170	273	402	780	93.8	133.8	154 × 2.0	91.3	108.8	225	25.5	17

* The maximum wall thickness of the tank can be 8 mm.

Position	Description of the order code for the standard version			
1	**Valve type**			
	N	ECOVENT® single-seat bottom valve		
2	**Housing combinations**			
	F* 	D* 		
3	**Supplement to the valve type**			
	/ECO			
4/5	**Nominal width (upper housing/lower housing)**			
	DN 25	OD 1"		
	DN 40	OD 1 ½"		
	DN 50	OD 2"	IPS 2"	
	DN 65	OD 2 ½"		
	DN 80	OD 3"	IPS 3"	
	DN 100	OD 4"	IPS 4"	
6	**Actuator type**			
	E	Air / Spring		
7	**Non-actuated position**			
	Z	Spring-to-close (NC)		
	A	Spring-to-open (NO)		
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**			
	Actuator (spring-to-close)		Actuator (spring-to-open)	For nominal widths
	EAA		EAA	DN 25, OD 1"
	EBB		EBA	DN 40, DN 50, OD 1 ½", OD 2"
	ECD		ECB	DN 65, DN 80, OD 2 ½", OD 3"
	EDF		EDD	DN 100, OD 4"
9	**Valve seat version**			
	L0	Loose seat ring / Clamp connection		
10	**Seal material in contact with the product**			
	1	EPDM (FDA)		
	2	FKM (FDA)		
	3	HNBR (FDA)		
11	**Surface quality of the housing**			
	2	Inside $R_a \leq 0.8$ µm, outside matt blasted (DN, OD)		
12	**Connection fittings**			
	N	Welding end		
13	**Accessories**			
	T	Housing connection T		
	T-S	Housing connection T-S		
	U	Housing connection U		
	U-S	Housing connection U-S		
	/52	Adhesive ID tag		
+				
14–19	**Air connection / Control and feedback system**			
	00000M	Metric for air hose Ø 6/4 mm		
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)		
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation		

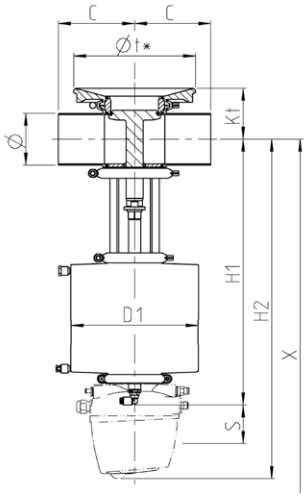
* Selection of possible housing connection see position 13

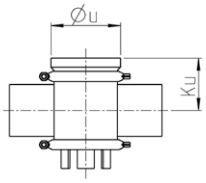
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19					
Code	N		/ECO	-	/	-	E		-		-	L0	-		2	N		/52	+						

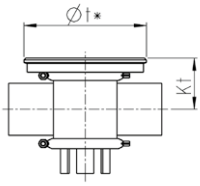
For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type N_V
Single-seat Long-stroke Bottom Valve

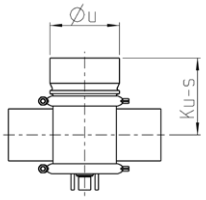




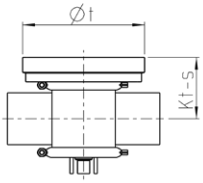
Housing connection U



Housing connection T



Housing connection U-S



Housing connection T-S



Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	4.8 bar (70 psi)
Product pressure	DN 65 – DN 80, OD 2 ½" – OD 3": 10 bar (145 psi)
	DN 100, OD 4": 5.2 bar (75 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring
Marking / Certificates	CE, CERTIFIED EHEDG TYPE EL – CLASS I, FDA

* Optionally with housing connection flange U or housing connection flange T (see position 13)

	Pipe	Housing	Actuator			Dimensions	Housing connection U and U-S			Housing connection T and T-S			Valve	
Nominal width	Ø [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Ku [mm]	Ku-s [mm]	Øu [mm]	Kt [mm]	Kt-s [mm]	Øt* [mm]	Stroke S [mm]	Weight [kg]
DN 65	70.0 × 2.00	125	210	421	550	695	78.0	118.0	114 × 2.5	76.0	83.0	200	41.5	24
DN 80	85.0 × 2.00	125	210	429	558	703	85.5	125.5	114 × 2.5	83.5	100.5	200	56.5	24
DN 100	104.0 × 2.00	125	210	438	567	712	95.0	135.0	154 × 2.0	92.5	110.0	225	60.0	27
OD 2 ½"	63.5 × 1.65	125	210	425	554	699	75.0	115.0	114 × 2.5	73.0	90.0	200	42.5	24
OD 3"	76.2 × 1.65	125	210	432	561	706	81.5	121.5	114 × 2.5	79.5	86.5	200	55.5	24
OD 4"	101.6 × 2.11	125	210	438	567	712	93.8	133.8	154 × 2.0	91.3	108.8	225	60.5	27

* The maximum wall thickness of the tank can be 8 mm.

Position	Description of the order code for the standard version	
1	**Valve type**	
	N	VARIVENT® single-seat long-stroke bottom valve
2	**Housing combinations**	
	F* 	D* 
3	**Supplement to the valve type**	
	V	Long-stroke
4/5	**Nominal width (upper housing/lower housing)**	
	DN 65	OD 2 ½"
	DN 80	OD 3"
	DN 100	OD 4"
6	**Actuator type**	
	L	Air/Spring, long stroke
7	**Non-actuated position**	
	Z	Spring-to-close (NC)
	A	Spring-to-open (NO)
8	**Standard configuration with 4.8 bar air supply pressure for 10 bar product pressure (DN 65 – DN 80, OD 2 ½" – OD 3") or 5.2 bar (DN 100, OD 4") – (higher pressures on request)**	
	Actuator (spring-to-close)	Actuator (spring-to-open)
	ZEF/V	ZEF/V
9	**Valve seat version**	
	L0	Loose seat ring / Clamp connection
10	**Seal material in contact with the product**	
	1	EPDM (FDA)
	2	FKM (FDA)
	3	HNBR (FDA)
11	**Surface quality of the housing**	
	2	Inside R_a ≤ 0.8 µm, outside matt blasted
12	**Connection fittings**	
	N	Welding end
13	**Accessories**	
	T	Housing connection T (up to DN 100, OD 4")
	T-S	Housing connection T-S
	U	Housing connection U
	U-S	Housing connection U-S
	/52	Adhesive ID tag
+		
14–19	**Air connection / Control and feedback system**	
	00000M	Metric for air hose Ø 6/4 mm
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation

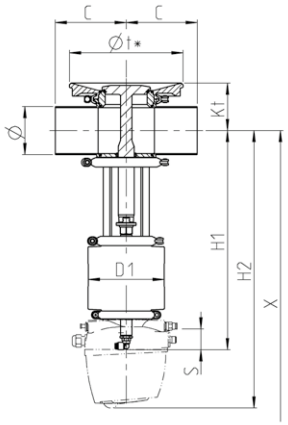
* Selection of possible housing connection see position 13

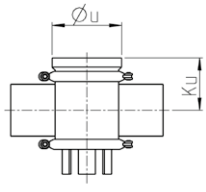
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	N		V	-	/	-	L		-	ZEF/V	-	L0	-		2	N		/52	+						

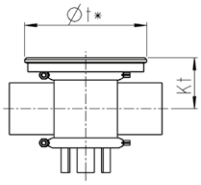
For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type U
Single-seat Bottom Valve

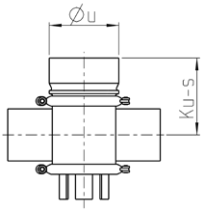




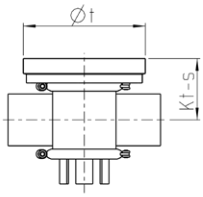
Housing connection U



Housing connection T



Housing connection U-S



Housing connection T-S



Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring
Marking / Certificates	CE FDA

* Optionally with housing connection flange U or housing connection flange T (see position 13)

	Pipe	Housing	Actuator			Dimensions	Housing connection U and U-S			Housing connection T and T-S			Valve	
Nominal width	Ø [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Ku [mm]	Ku-s [mm]	Øu [mm]	Kt [mm]	Kt-s [mm]	Øt* [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	90.0	99	294	423	623	50.0	90.0	70 × 2.0	49.0	66.0	145	18	7
DN 40	41.0 × 1.50	90.0	110	335	464	664	56.0	96.0	85 × 2.0	55.5	72.0	165	25	9
DN 50	53.0 × 1.50	90.0	110	341	470	670	62.0	102.0	85 × 2.0	61.5	78.0	165	29	10
DN 65	70.0 × 2.00	125.0	135	352	481	711	78.0	118.0	114 × 2.5	76.0	83.0	200	30	15
DN 80	85.0 × 2.00	125.0	135	360	489	719	85.5	125.5	114 × 2.5	83.5	100.5	200	30	15
DN 100	104.0 × 2.00	125.0	170	399	528	778	95.0	135.0	154 × 2.0	92.5	110.0	225	30	21
DN 125	129.0 × 2.00	150.0	260	555	684	984	107.5	147.5	184 × 3.0	–	–	–	60	48
DN 150	154.0 × 2.00	150.0	260	579	708	1,008	120.0	160.0	212 × 4.0	–	–	–	60	54
OD 1"	25.4 × 1.65	90.0	99	292	421	621	48.0	88.0	70 × 2.0	47.0	64.0	145	22	7
OD 1 ½"	38.1 × 1.65	90.0	110	337	466	666	54.5	94.5	85 × 2.0	54.0	70.5	165	25	9
OD 2"	50.8 × 1.65	90.0	110	343	472	672	60.8	100.8	85 × 2.0	60.3	76.8	165	28	10
OD 2 ½"	63.5 × 1.65	125.0	135	356	485	715	75.0	115.0	114 × 2.5	73.0	90.0	200	29	14
OD 3"	76.2 × 1.65	125.0	135	363	492	722	81.5	121.5	114 × 2.5	79.5	86.5	200	31	14
OD 4"	101.6 × 2.11	125.0	170	401	530	780	93.8	133.8	154 × 2.0	91.3	108.8	225	29	21
OD 6"	152.4 × 2.77	150.0	260	578	707	1,007	118.5	158.5	212 × 4.0	–	–	–	60	54
IPS 2"	60.3 × 2.00	114.3	110	338	467	667	65.5	105.5	85 × 2.0	65.0	81.5	165	29	10
IPS 3"	88.9 × 2.30	152.5	135	358	487	717	87.5	127.5	114 × 2.5	85.5	102.5	200	30	15
IPS 4"	114.3 × 2.30	152.5	170	394	523	773	100.0	140.0	154 × 2.0	97.5	115.0	225	30	22
IPS 6"	168.3 × 2.77	152.5	260	573	702	1,002	126.0	166.0	212 × 4.0	–	–	–	60	55

* The maximum wall thickness of the tank can be 8 mm.

Position	Description of the order code for the standard version			
1	**Valve type**			
	U	VARIVENT® single-seat bottom valve		
2	**Housing combinations**			
	F* 	D* 		
3	**Supplement to the valve type**			
	Reserved for options			
4/5	**Nominal width (upper housing/lower housing)**			
	DN 25	OD 1"		
	DN 40	OD 1 ½"		
	DN 50	OD 2"	IPS 2"	
	DN 65	OD 2 ½"		
	DN 80	OD 3"	IPS 3"	
	DN 100	OD 4"	IPS 4"	
	DN 125			
	DN 150	OD 6"	IPS 6"	
6	**Actuator type**			
	S	Air / Spring		
7	**Non-actuated position**			
	Z	Spring-to-close (NC)		
	A	Spring-to-open (NO)		
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**			
	Actuator (spring-to-close)		Actuator (spring-to-open)	For nominal widths
	AA		AA	DN 25, OD 1"
	BB		BA	DN 40, DN 50, OD 1 ½", OD 2", IPS 2"
	CD		CB	DN 65, DN 80, OD 2 ½", OD 3", IPS 3"
	DF		DD	DN 100, OD 4", IPS 4"
	SH6		EF6	DN 125
	SK6		SG6	DN 150, OD 6", IPS 6"
9	**Valve seat version**			
	L0	Loose seat ring / Clamp connection		
10	**Seal material in contact with the product**			
	1	EPDM (FDA)		
	2	FKM (FDA)		
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")		
11	**Surface quality of the housing**			
	2	Inside R_a ≤ 0.8 µm, outside matt blasted		
12	**Connection fittings**			
	N	Welding end		
13	**Accessories**			
	T	Housing connection T (up to DN 100, OD 4", IPS 4")		
	T-S	Housing connection T-S (up to DN 100, OD 4", IPS 4")		
	U	Housing connection U		
	U-S	Housing connection U-S		
	/52	Adhesive ID tag		
+				
14–19	**Air connection / Control and feedback system**			
	00000M	Metric for air hose Ø 6/4 mm		
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)		
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation		

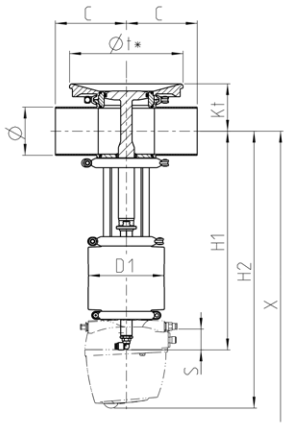
* Selection of possible housing connection see position 13

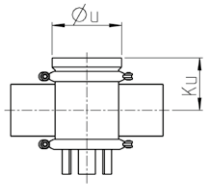
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19						
Code	U			-	/	-	S		-		-	L0	-		2	N		/52	+							

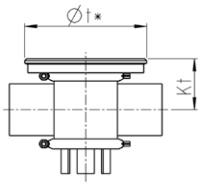
For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type U_R Radial Sealing Single-seat Bottom Valve

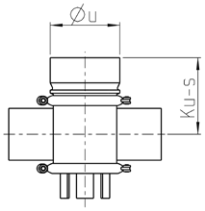




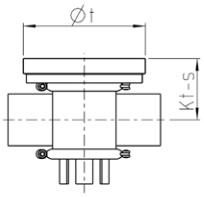
Housing connection U



Housing connection T



Housing connection U-S



Housing connection T-S



Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring
Marking / Certificates	CE FDA

* Optionally with housing connection flange U or housing connection flange T (see position 13)

	Pipe	Housing	Actuator			Dimensions	Housing connection U and U-S			Housing connection T and T-S			Valve	
Nominal width	Ø [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Ku [mm]	Ku-s [mm]	Øu [mm]	Kt [mm]	Kt-s [mm]	Øt* [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	90.0	99	294	423	623	50.0	90.0	70 × 2.0	49.0	66.0	145	18	7
DN 40	41.0 × 1.50	90.0	110	335	464	664	56.0	96.0	85 × 2.0	55.5	72.0	165	25	9
DN 50	53.0 × 1.50	90.0	110	341	470	670	62.0	102.0	85 × 2.0	61.5	78.0	165	29	10
DN 65	70.0 × 2.00	125.0	135	352	481	711	78.0	118.0	114 × 2.5	76.0	83.0	200	30	15
DN 80	85.0 × 2.00	125.0	135	360	489	719	85.5	125.5	114 × 2.5	83.5	100.5	200	30	15
DN 100	104.0 × 2.00	125.0	170	399	528	778	95.0	135.0	154 × 2.0	92.5	110.0	225	30	21
DN 125	129.0 × 2.00	150.0	260	555	684	984	107.5	147.5	184 × 3.0	–	–	–	60	48
DN 150	154.0 × 2.00	150.0	260	579	708	1,008	120.0	160.0	212 × 4.0	–	–	–	60	54
OD 1"	25.4 × 1.65	90.0	99	292	421	621	48.0	88.0	70 × 2.0	47.0	64.0	145	22	7
OD 1 ½"	38.1 × 1.65	90.0	110	337	466	666	54.5	94.5	85 × 2.0	54.0	70.5	165	25	9
OD 2"	50.8 × 1.65	90.0	110	343	472	672	60.8	100.8	85 × 2.0	60.3	76.8	165	28	10
OD 2 ½"	63.5 × 1.65	125.0	135	356	485	715	75.0	115.0	114 × 2.5	73.0	90.0	200	29	14
OD 3"	76.2 × 1.65	125.0	135	363	492	722	81.5	121.5	114 × 2.5	79.5	86.5	200	31	14
OD 4"	101.6 × 2.11	125.0	170	401	530	780	93.8	133.8	154 × 2.0	91.3	108.8	225	29	21
OD 6"	152.4 × 2.77	150.0	260	578	707	1,007	118.5	158.5	212 × 4.0	–	–	–	60	54

* The maximum wall thickness of the tank can be 8 mm.

Position	Description of the order code for the standard version		
1	**Valve type**		
	U	VARIVENT® single-seat bottom valve	
2	**Housing combinations**		
	F* 	D* 	
3	**Supplement to the valve type**		
	R	Radial sealing	
4/5	**Nominal width (upper housing/lower housing)**		
	DN 25	OD 1"	
	DN 40	OD 1 ½"	
	DN 50	OD 2"	
	DN 65	OD 2 ½"	
	DN 80	OD 3"	
	DN 100	OD 4"	
	DN 125		
	DN 150	OD 6"	
6	**Actuator type**		
	S	Air / Spring	
7	**Non-actuated position**		
	Z	Spring-to-close (NC)	
	A	Spring-to-open (NO)	
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**		
	Actuator (spring-to-close)	Actuator (spring-to-open)	For nominal widths
	AA	AA	DN 25, OD 1"
	BB	BA	DN 40, DN 50, OD 1 ½", OD 2"
	CD	CB	DN 65, DN 80, OD 2 ½", OD 3"
	DF	DD	DN 100, OD 4"
	SH6	EF6	DN 125
	SK6	SG6	DN 150, OD 6"
9	**Valve seat version**		
	L0	Loose seat ring / Clamp connection	
10	**Seal material in contact with the product**		
	1	EPDM (FDA)	
	2	FKM (FDA)	
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")	
11	**Surface quality of the housing**		
	2	Inside R_a ≤ 0.8 µm, outside matt blasted	
12	**Connection fittings**		
	N	Welding end	
13	**Accessories**		
	T	Housing connection T (up to DN 100, OD 4")	
	T-S	Housing connection T-S (up to DN 100, OD 4")	
	U	Housing connection U	
	U-S	Housing connection U-S	
	/52	Adhesive ID tag	
+			
14–19	**Air connection / Control and feedback system**		
	00000M	Metric for air hose Ø 6/4 mm	
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)	
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation	

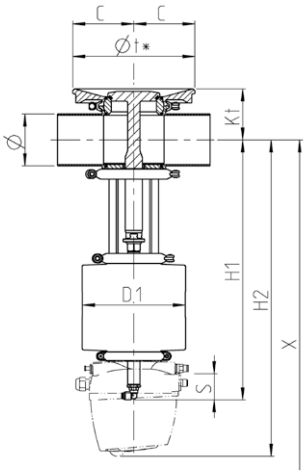
* Selection of possible housing connection see position 13

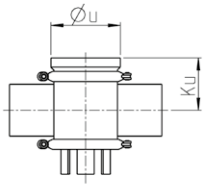
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19						
Code	U		R	-	/	-	S		-		-	L0	-		2	N		/52	+							

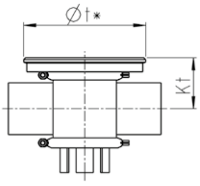
For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type U_V Single-seat Long-stroke Bottom Valve

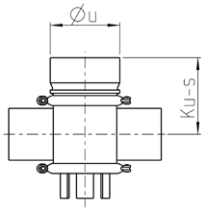




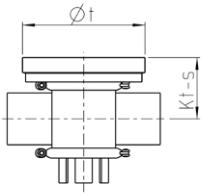
Housing connection U



Housing connection T



Housing connection U-S



Housing connection T-S



Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	4.8 bar (70 psi)
Product pressure	DN 80, OD 3": 5 bar (73 psi)
	DN 100, OD 4": 5.6 bar (81 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring
Marking / Certificates	CE FDA

* Optionally with housing connection flange U or housing connection flange T (see position 13)

	Pipe	Housing	Actuator	Dimensions			Housing connection U and U-S			Housing connection T and T-S			Valve	
Nominal width	Ø [mm]	C [mm]	D1 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Ku [mm]	Ku-s [mm]	Øu [mm]	Kt [mm]	Kt-s [mm]	Øt* [mm]	Stroke S [mm]	Weight [kg]
DN 80	85.0 × 2.00	125	170	390	519	749	85.5	125.5	114 × 2.5	83.5	100.5	200	40	18
DN 100	104.0 × 2.00	125	210	409	538	788	95.0	135.0	154 × 2.0	92.5	110.0	225	40	24
OD 3"	76.2 × 1.65	125	170	393	522	752	81.5	121.5	114 × 2.5	79.5	86.5	200	41	18
OD 4"	101.6 × 2.11	125	170	411	540	790	93.8	133.8	154 × 2.0	91.3	108.8	225	39	24

* The maximum wall thickness of the tank can be 8 mm.

Position	Description of the order code for the standard version		
1	**Valve type**		
	U	VARIVENT® single-seat long-stroke bottom valve	
2	**Housing combinations**		
	F* 	D* 	
3	**Supplement to the valve type**		
	V	Long-stroke	
4/5	**Nominal width (upper housing/lower housing)**		
	DN 80	OD 3"	
	DN 100	OD 4"	
6	**Actuator type**		
	S	Air/Spring,	
7	**Non-actuated position**		
	Z	Spring-to-close (NC)	
	A	Spring-to-open (NO)	
8	**Standard configuration with 4.8 bar air supply pressure for 5 bar product pressure (DN 80, OD 3") or 5.6 bar (DN 100, OD 4") – (higher pressures on request)**		
	Actuator (spring-to-close)	Actuator (spring-to-open)	For nominal widths
	DD5	DD5	DN 80, OD 3"
	EF5	EF5	DN 100, OD 4"
9	**Valve seat version**		
	L0	Loose seat ring / Clamp connection	
10	**Seal material in contact with the product**		
	1	EPDM (FDA)	
	2	FKM (FDA)	
	3	HNBR (FDA)	
11	**Surface quality of the housing**		
	2	Inside R_a ≤ 0.8 µm, outside matt blasted	
12	**Connection fittings**		
	N	Welding end	
13	**Accessories**		
	T	Housing connection T	
	T-S	Housing connection T-S	
	U	Housing connection U	
	U-S	Housing connection U-S	
	/52	Adhesive ID tag	
+			
14–19	**Air connection / Control and feedback system**		
	00000M	Metric for air hose Ø 6/4 mm	
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)	
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation	

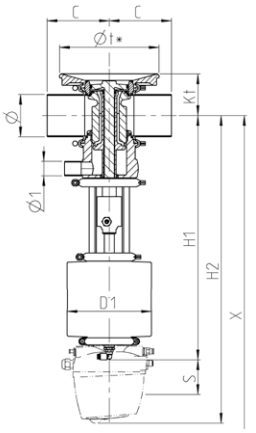
* Selection of possible housing connection see position 13

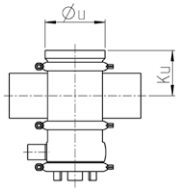
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19						
Code	U		V	-	/	-	S		-		-	L0	-		2	N		/52	+							

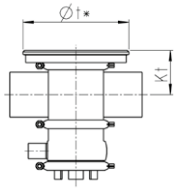
For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type T_R Radial Sealing Double-seat Bottom Valve

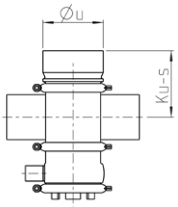




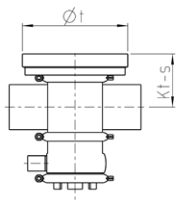
Housing connection U



Housing connection T



Housing connection U-S



Housing connection T-S



Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	$R_a \leq 0.8$ µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring
Marking / Certificates	CE FDA

* Up to DN 100, OD 4", IPS 4"

	Pipe	Pipe leakage	Housing	Actuator	Spray cleaning hose (PTFE)	Dimensions			Housing connection U and U-S			Housing connection T and T-S			Valve	
Nominal width	Ø [mm]	Ø1 [mm]	C [mm]	D1 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clearence X [mm]	Ku [mm]	Ku-s [mm]	Øu [mm]	Kt [mm]	Kt-s [mm]	Øt* [mm]	Stroke S [mm]	Weight [kg]
DN 40	41.0 × 1.50	23 × 1.5	90.0	135	8/6	415	544	649	56.0	96.0	85 × 2.0	55.5	72.0	165	22	14
DN 50	53.0 × 1.50	23 × 1.5	90.0	135	8/6	421	550	655	62.0	102.0	85 × 2.0	61.5	78.0	165	30	15
DN 65	70.0 × 2.00	29 × 1.5	125.0	170	8/6	461	590	765	78.0	118.0	114 × 2.5	76.0	83.0	200	30	25
DN 80	85.0 × 2.00	29 × 1.5	125.0	170	8/6	488	617	792	85.5	125.5	114 × 2.5	83.5	100.5	200	40	26
DN 100	104.0 × 2.00	29 × 1.5	125.0	210	8/6	488	617	792	95.0	135.0	154 × 2.0	92.5	110.0	225	40	35
DN 125	129.0 × 2.00	41 × 1.5	150.0	261	10/8	652	781	1,011	107.5	147.5	184 × 3.0	–	–	–	60	57
DN 150	154.0 × 2.00	41 × 1.5	150.0	261	10/8	676	805	1,035	120.0	160.0	212 × 4.0	–	–	–	60	71
OD 1 ½"	38.1 × 1.65	23 × 1.5	90.0	135	8/6	416	545	650	54.5	94.5	85 × 2.0	54.0	70.5	165	22	14
OD 2"	50.8 × 1.65	23 × 1.5	90.0	135	8/6	422	551	656	60.8	100.8	85 × 2.0	60.3	76.8	165	31	15
OD 2 ½"	63.5 × 1.65	29 × 1.5	125.0	170	8/6	465	594	769	75.0	115.0	114 × 2.5	73.0	90.0	200	31	24
OD 3"	76.2 × 1.65	29 × 1.5	125.0	170	8/6	491	620	795	81.5	121.5	114 × 2.5	79.5	86.5	200	39	26
OD 4"	101.6 × 2.11	29 × 1.5	125.0	210	8/6	490	619	794	93.8	133.8	154 × 2.0	91.3	108.8	225	41	36
OD 6"	152.4 × 2.77	41 × 1.5	150.0	261	10/8	675	804	1,034	118.5	158.5	212 × 4.0	–	–	–	60	71
IPS 2"	60.3 × 2.00	23 × 1.5	114.3	135	8/6	425	554	659	65.5	105.5	84 × 2.0	65.0	81.5	165	30	16
IPS 3"	88.9 × 2.30	29 × 1.5	152.5	170	8/6	490	619	794	87.5	127.5	114 × 2.5	85.5	102.5	200	40	28
IPS 4"	114.3 × 2.30	29 × 1.5	152.5	210	8/6	493	622	797	100.0	140.0	154 × 2.0	97.5	115.0	225	40	38
IPS 6"	168.3 × 2.77	41 × 1.5	152.5	261	10/8	670	799	1,029	126.0	166.0	212 × 4.0	–	–	–	60	72

* The maximum wall thickness of the tank can be 8 mm.

Position	Description of the order code for the standard version		
1	**Valve type**		
	T	VARIVENT® double-seat bottom valve	
2	**Housing combinations**		
	L* 	T* 	F**  D** 
3	**Supplement to the valve type**		
	R	Radial seat	
4/5	**Nominal width (upper housing/lower housing)**		
	DN 40	OD 1 ½"	
	DN 50	OD 2"	IPS 2"
	DN 65	OD 2 ½"	
	DN 80	OD 3"	IPS 3"
	DN 100	OD 4"	IPS 4"
	DN 125		
	DN 150	OD 6"	IPS 6"
6	**Actuator type**		
	S	Air / Spring	
7	**Non-actuated position**		
	Z	Spring-to-close (NC)	
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**		
	Actuator (spring-to-close)	For nominal widths	
	CD	DN 40, DN 50, OD 1 ½", OD 2", IPS 2"	
	DF	DN 65, OD 2 ½"	
	DF5	DN 80, OD 3", IPS 3"	
	EG5	DN 100, OD 4", IPS 4"	
	SH6	DN 125	
	SK6	DN 150, OD 6", IPS 6"	
9	**Valve seat version**		
	L0	Loose seat ring / Clamp connection	
10	**Seal material in contact with the product**		
	1	EPDM (FDA)	
	2	FKM (FDA)	
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")	
11	**Surface quality of the housing**		
	2	Inside R_a ≤ 0.8 µm, outside matt blasted	
12	**Connection fittings*** **		
	N	Welding end	
13	**Accessories**		
	T	Housing connection T (up to DN 100, OD 4", IPS 4")	
	T-S	Housing connection T-S (up to DN 100, OD 4", IPS 4")	
	U	Housing connection U	
	U-S	Housing connection U-S	
	/52	Adhesive ID tag	
+			
14–19	**Air connection / Control and feedback system**		
	00000M	Metric for air hose Ø 6/4 mm	
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)	
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation	

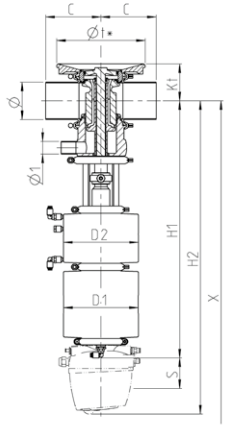
* Up to DN 100, OD 4", IPS 4", optionally with housing connection T or T-S (see position 13).
** Optionally with housing connection U or U-S (see position 13)
*** The leakage housing socket can be ordered with a GK connection fitting upon request (please specify separately when ordering).

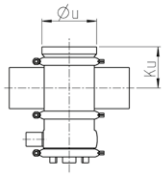
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13	+	14 to 19						
Code	T		R	-	/	-	S	Z	-		-	L0	-		2	N	/52	+							

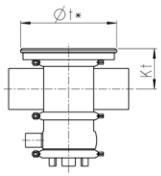
For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type T_RL, T_RC Radial Sealing Double-seat Bottom Valve with Lifting Actuator

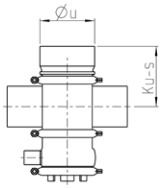




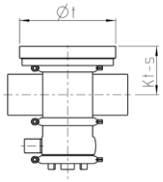
Housing connection U



Housing connection T



Housing connection U-S



Housing connection T-S



Technical data of the standard version

Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring
Marking / Certificates	CE FDA

* Up to DN 100, OD 4", IPS 4"

	Pipe	Pipe leakage	Housing	Actuator		Spray cleaning hose (PTFE)	Dimensions			Housing connection U and U-S			Housing connection T and T-S			Valve	
Nominal width	Ø [mm]	Ø1 [mm]	C [mm]	D1 [mm]	D2 [mm]	Ø [mm]	H1 [mm]	H2 [mm]	Clea-rance X [mm]	Ku [mm]	Ku-s [mm]	Øu [mm]	Kt [mm]	Kt-s [mm]	Øt* [mm]	Stroke S [mm]	Weight [kg]
DN 40	41.0 × 1.50	23 × 1.5	90.0	110	110	8/6	506	635	740	56.0	96.0	85 × 2.0	55.5	72.0	165	28	17
DN 50	53.0 × 1.50	23 × 1.5	90.0	110	110	8/6	504	633	738	62.0	102.0	85 × 2.0	61.5	78.0	165	31	17
DN 65	70.0 × 2.00	29 × 1.5	125.0	135	135	8/6	514	643	818	78.0	118.0	114 × 2.5	76.0	83.0	200	35	26
DN 80	85.0 × 2.00	29 × 1.5	125.0	135	170	8/6	551	680	855	85.5	125.5	114 × 2.5	83.5	100.5	200	45	31
DN 100	104.0 × 2.00	29 × 1.5	125.0	170	170	8/6	481	610	785	95.0	135.0	154 × 2.0	92.5	110.0	225	45	40
DN 125	129.0 × 2.00	41 × 1.5	150.0	210	210	10/8	760	889	1,119	107.5	147.5	184 × 3.0	–	–	–	65	65
DN 150	154.0 × 2.00	41 × 1.5	150.0	210	210	10/8	784	913	1,143	120.0	160.0	212 × 4.0	–	–	–	65	83
OD 1 ½"	38.1 × 1.65	23 × 1.5	90.0	110	110	8/6	507	636	741	54.5	94.5	85 × 2.0	54.0	70.5	165	21	17
OD 2"	50.8 × 1.65	23 × 1.5	90.0	110	110	8/6	505	634	739	60.8	100.8	85 × 2.0	60.3	76.8	165	31	17
OD 2 ½"	63.5 × 1.65	29 × 1.5	125.0	135	135	8/6	517	646	821	75.0	115.0	114 × 2.5	73.0	90.0	200	35	26
OD 3"	76.2 × 1.65	29 × 1.5	125.0	135	170	8/6	555	684	859	81.5	121.5	114 × 2.5	79.5	86.5	200	45	30
OD 4"	101.6 × 2.11	29 × 1.5	125.0	170	170	10/8	582	711	886	93.8	133.8	154 × 2.0	91.3	108.8	225	45	40
OD 6"	152.4 × 2.77	41 × 1.5	150.0	210	210	10/8	786	915	1,145	118.5	158.5	212 × 4.0	–	–	–	65	79
IPS 2"	60.3 × 2.00	23 × 1.5	114.3	110	110	8/6	507	636	741	65.5	105.5	84 × 2.0	65.0	81.5	165	30	19
IPS 3"	88.9 × 2.30	29 × 1.5	152.5	135	170	8/6	553	682	857	87.5	127.5	114 × 2.5	85.5	102.5	200	45	33
IPS 4"	114.3 × 2.30	29 × 1.5	152.5	170	170	8/6	586	715	890	100.0	140.0	154 × 2.0	97.5	115.0	225	45	43
IPS 6"	168.3 × 2.77	41 × 1.5	152.5	210	210	10/8	778	907	1,137	126.0	166.0	212 × 4.0	–	–	–	65	80

* The maximum wall thickness of the tank can be 8 mm.

Position	Description of the order code for the standard version		
1	**Valve type**		
	T	VARIVENT® double-seat bottom valve	
2	**Housing combinations**		
	L* T* F** D** 		
3	**Supplement to the valve type**		
	RL	Radial seat, with lifting actuator and spray cleaning	
	RC	Radial seat, with lifting actuator without spray cleaning	
4/5	**Nominal width (upper housing/lower housing)**		
	DN 40	OD 1 ½"	
	DN 50	OD 2"	IPS 2"
	DN 65	OD 2 ½"	
	DN 80	OD 3"	IPS 3"
	DN 100	OD 4"	IPS 4"
	DN 125		
	DN 150	OD 6"	IPS 6"
6	**Actuator type**		
	S	Air / Spring	
7	**Non-actuated position**		
	Z	Spring-to-close (NC)	
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**		
	Actuator (spring-to-close)	/Lifting actuator	For nominal widths
	BD	/ BLR	DN 40, DN 50, OD 1 ½", OD 2", IPS 2"
	CF	/ CLT	DN 65, OD 2 ½"
	CF5	/ DLT5	DN 80, OD 3", IPS 3"
	DG5	/ DLT5	DN 100, OD 4", IPS 4"
	EH6	/ ELR6	DN 125
	EK6	/ ELR6	DN 150, OD 6", IPS 6"
9	**Valve seat version**		
	L0	Loose seat ring / Clamp connection	
10	**Seal material in contact with the product**		
	1	EPDM (FDA)	
	2	FKM (FDA)	
	3	HNBR (FDA); (up to DN 100, OD 4", IPS 4")	
11	**Surface quality of the housing**		
	2	Inside R_a ≤ 0.8 µm, outside matt blasted	
12	**Connection fittings*** **		
	N	Welding end	
13	**Accessories**		
	T	Housing connection T (up to DN 100, OD 4", IPS 4")	
	T-S	Housing connection T-S (up to DN 100, OD 4", IPS 4")	
	U	Housing connection U	
	U-S	Housing connection U-S	
	/52	Adhesive ID tag	
+			
14–19	**Air connection / Control and feedback system**		
	00000M	Metric for air hose Ø 6/4 mm	
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)	
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation	

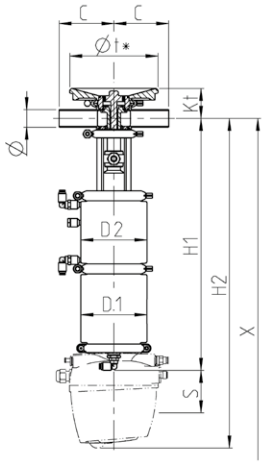
* Up to DN 100, OD 4", IPS 4", optionally with housing connection T or T-S (see position 13).
** Optionally with housing connection U or U-S (see position 13).
*** The leakage housing socket can be ordered with a GK connection fitting upon request (please specify separately when ordering).

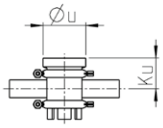
The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	T			-	/	-	S	Z	-		-	L0	-		2	N	/52	+							

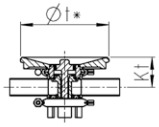
For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type T_RC DN 25, OD 1" Radial Sealing Double-seat Bottom Valve with Lifting Actuator

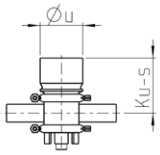




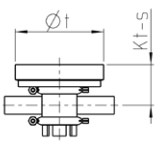
Housing connection U



Housing connection T



Housing connection U-S



Housing connection T-S



Technical data of the standard version	
Recommended flow direction	Against the closing direction
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM, HNBR
Ambient temperature	0 to 45 °C
Air supply pressure	6 bar (87 psi)
Product pressure	5 bar (73 psi)
Surface in contact with the product	R_a ≤ 0.8 µm
External housing surface	Matt blasted
Control and feedback system	Connection 0 (without control top)
Actuator type	Pneumatic actuator air/spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Clamped seat ring
Marking / Certificates	CE FDA

	Pipe	Housing	Actuator		Dimensions			Housing connection U and U-S			Housing connection T and T-S			Valve	
Nominal width	Ø [mm]	C [mm]	D1 [mm]	D2 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]	Ku [mm]	Ku-s [mm]	Øu [mm]	Kt [mm]	Kt-s [mm]	Øt* [mm]	Stroke S [mm]	Weight [kg]
DN 25	29.0 × 1.50	90	110	110	412	541	646	50	90	70 × 2	49	66	145	25	13
OD 1"	25.4 × 1.65	90	110	110	414	543	648	49	89	70 × 2	47	64	145	22	13

* The maximum wall thickness of the tank can be 8 mm.

Position	Description of the order code for the standard version	
1	**Valve type**	
	T	VARIVENT® double-seat bottom valve with lift function
2	**Housing combinations**	
	L*  T*  F**  D** 	
3	**Supplement to the valve type**	
	RC	Radial seat, with lifting actuator without spray cleaning
4/5	**Nominal width (upper housing/lower housing)**	
	DN 25	OD 1"
6	**Actuator type**	
	S	Air / Spring
7	**Non-actuated position**	
	Z	Spring-to-close (NC)
8	**Standard configuration with 6 bar air supply pressure for 5 bar product pressure (higher pressures on request)**	
	Actuator (spring-to-close)	/Lifting actuator
	BD	/ BLR
9	**Valve seat version**	
	L0	Loose seat ring / Clamp connection
10	**Seal material in contact with the product**	
	1	EPDM (FDA)
	2	FKM (FDA)
	3	HNBR (FDA)
11	**Surface quality of the housing**	
	2	Inside R_a ≤ 0.8 µm, outside matt blasted (DN, OD)
12	**Connection fittings**	
	N	Welding end
13	**Accessories**	
	T	Housing connection T (up to DN 100, OD 4", IPS 4")
	T-S	Housing connection T-S (up to DN 100, OD 4", IPS 4")
	U	Housing connection U
	U-S	Housing connection U-S
	/52	Adhesive ID tag
+		
14–19	**Air connection / Control and feedback system**	
	00000M	Metric for air hose Ø 6/4 mm
	00000Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)
	▶ T.VIS	▶ Information and order code for different control and feedback systems see catalog GEA Valve Automation

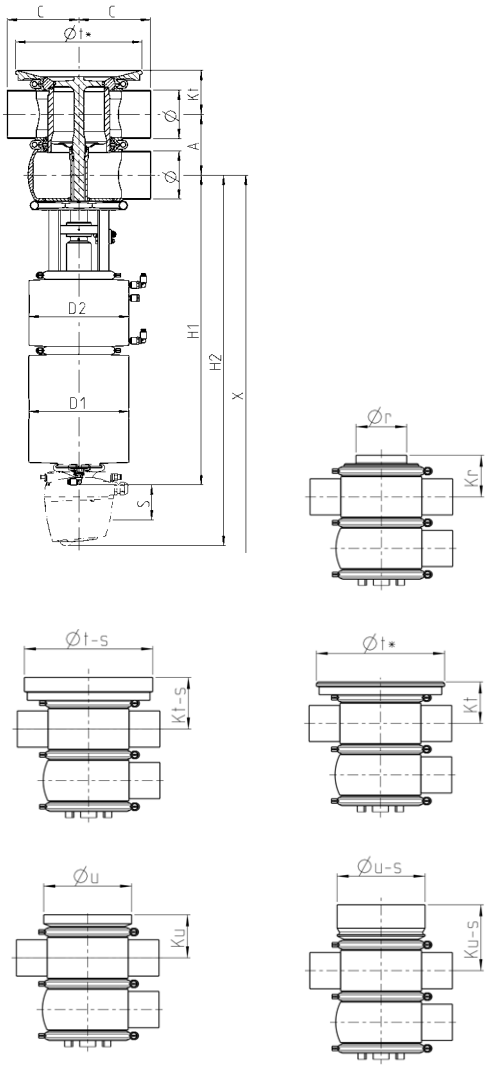
* Optionally with housing connection T or T-S (see postion 13).
** Optionally with housing connection U or U-S (see postion 13).

The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	T		RC	-	/	-	S	Z	-	BD/BLR	-	L0	-		2	N	/52	+							

For order codes differing from the standard version, please refer to section 8.

VARIVENT® Type MT
24/7 PMO Double-seat Bottom Valve with Lifting Actuator





* only OD 2", 2 ½" and 3"

Technical data of the standard version

Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM
Ambient temperature	0 to 45 °C
Air supply pressure	Min. 4.8 bar (70 psi)
Product pressure	Max. 6 bar (87 psi)
Surface in contact with the product	OD R_a ≤ 0.8 µm
External housing surface	Ground
Control and feedback system	Selectable; the feedback of all valve positions is required acc. to PMO
Actuator type	Pneumatic actuator air / spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Welded or loose seat ring
Marking / Certificates	24/7 PMO VALVE 2.0 CE FDA

	Pipe	Housing	Actuator		Dimensions		
Nominal width	Ø [mm]	A [mm]	C [mm]	D1 [mm]	D2 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]
OD 2"	50.8 × 1.65	77.5	125	110	110	426	555	805
OD 2 ½"	63.5 × 1.65	90.0	125	170	135	492	621	871
OD 3"	76.2 × 1.65	103.0	125	210	210	637	766	1,016
OD 4"	101.6 × 2.11	127.5	150	210	210	649	778	1,028
OD 6"	152.4 × 2.77	177.0	175	260	260	682	811	1,159

	Housing connection U and U-S			Housing connection T and T-S			Housing connection MG and MN		Valve	
Nominal width	Ku [mm]	Ku-s [mm]	Øu, Øu-s [mm]	Kt [mm]	Kt-s [mm]	Øt, Øt-s [mm]	Kr [mm]	Ør [mm]	Stroke S [mm]	Weight [kg]
OD 2"	68.5	108.5	114	66.5	83.5	200	67.0	60.3	35	31.5
OD 2 ½"	75.0	115.0	154	73.0	90.5	225	73.0	88.9	45	32.5
OD 3"	81.5	121.5	154	79.5	97.0	225	79.5	88.9	65	57.5
OD 4"	93.0	133.0	184	–	–	–	92.0	114.3	65	65.5
OD 6"	–	–	–	–	–	–	133.5	168.3	65	126.5

Position	Description of the order code for the standard version		
1	**Valve type**		
	MT	VARIVENT® 24/7 PMO double-seat bottom valve with lift function	
2	**Housing combinations**		
	L*	T*	F**
			
	D**	H***	R***
			
3	**Supplement to the valve type**		
	C	Radial seat, with lifting actuator without spray cleaning	
	L	Radial seat, with lifting actuator and spray cleaning	
4/5	**Nominal width (upper housing / lower housing)**		
	OD 2"		
	OD 2 ½"		
	OD 3"		
	OD 4"		
	OD 6"		
6	**Actuator type**		
	S	Air / Spring	
7	**Non-actuated position**		
	Z	Closed	
8	**Standard configuration with 4.8 bar air supply pressure for 6 bar product pressure**		
	Actuator (spring-to-close)	/ Lifting actuator	For nominal widths
	BD	/ BLT	OD 2"
	DG5	/ CLMT5	OD 2 ½"
	EK6	/ ELMT6	OD 3", OD 4"
	SN6	/ SLR6-MT	OD 6"
	Actuator (spring-to-close)	/ Lifting actuator with quick air exhaust	For nominal widths
	EK6	/ELMT6S	OD 3", OD 4"
	SN6	/SLR6S-MT	OD 6"
9	**Valve seat version**		
	L0	Loose seat ring	
	V0	Welded seat ring (only for housing combinations H and R)	
10	**Seal material in contact with the product**		
	1	EPDM (FDA)	
	2	FKM (FDA)	
11	**Surface quality of the housing**		
	5	Inside R_a ≤ 0.8 µm, valve completely ground	
12	**Connection fittings**		
	N	Welding end	
13	**Accessories**		
	MG	Housing connection MG graduated (for vertical installation)	
	MN	Housing connection MN groove	
	T	Housing connection T (up to OD 3")	
	T-S	Housing connection T-S (up to OD 3")	
	U	Housing connection U (up to OD 4")	
	U-S	Housing connection U-S (up to OD 4")	
	/52/3A	Identification label sticker; valve design acc. to 3-A	
+			
14–19	**Control and feedback system**		
	▶ T.VIS	▶ Information and order code for T.VIS® A-15 control and feedback system see catalog GEA Valve Automation	

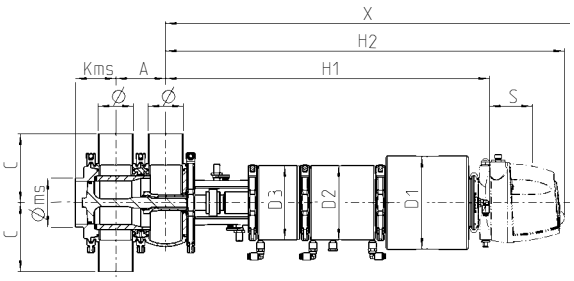
* Optionally with housing connection T or T-S (see position 13); only up to OD 3".
** Optionally with housing connection U or U-S (see position 13); only up to OD 4".
*** Optionally with housing connection MG or MN (see position 13).

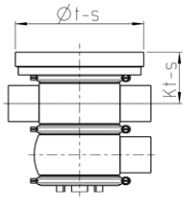
The code is composed as following, depending on the chosen configuration:

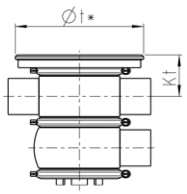
Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code	MT			-	/	-	S	Z	-		-		-		5	N		+							

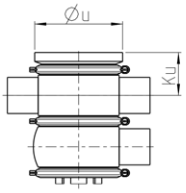
For order codes differing from the standard version, please refer to section 8.

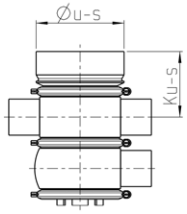
VARIVENT® Type MT
24/7 PMO Double-seat Bottom Valve with Lifting and Divisible Actuator













Technical data of the standard version	
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM, FKM
Ambient temperature	0 to 45 °C
Air supply pressure	Min. 4.8 bar (70 psi)
Product pressure	Max. 6 bar (87 psi)
Surface in contact with the product	OD R_a ≤ 0.8 µm
External housing surface	Ground
Control and feedback system	Selectable; the feedback of all valve positions is required acc. to PMO
Actuator type	Pneumatic actuator air / spring
Connection fittings	Welding end
Identification	Adhesive ID tag
Valve seat version	Welded or loose seat ring
Marking / Certificates	24/7 PMO VALVE 2.0 CE FDA

	Pipe	Housing	Actuator			Dimensions		
Nominal width	Ø [mm]	A [mm]	C [mm]	D1 [mm]	D2 [mm]	D3 [mm]	H1 [mm]	H2 [mm]	Clearance X [mm]
OD 2 ½"	63.5 × 1.65	90.0	125	170	135	135	750	621	900
OD 3"	76.2 × 1.65	103.0	125	210	210	170	1020	891	1,141
OD 4"	101.6 × 2.11	127.5	150	210	210	170	1032	903	1,153
OD 6"	152.4 × 2.77	177.0	175	260	260	210	1071	942	1,290

	Housing connection U and U-S			Housing connection T and T-S			Housing connection MS		Valve	
Nominal width	Ku [mm]	Ku-s [mm]	Øu, Øu-s [mm]	Kt [mm]	Kt-s [mm]	Øt, Øt-s [mm]	Kms [mm]	Øms [mm]	Stroke S [mm]	Weight [kg]
OD 2 ½"	75.0	115.0	154	73.0	90.5	225	73.0	88.9	45	45.0
OD 3"	81.5	121.5	154	79.5	97.0	225	79.5	88.9	65	66.5
OD 4"	93.0	133.0	184	–	–	–	92.0	114.3	65	74.5
OD 6"	–	–	–	–	–	–	133.5	168.3	65	142.0

Position	Description of the order code for the standard version		
1	**Valve type**		
	MT	VARIVENT® 24/7 PMO double-seat bottom valve with lift function and divisible actuator	
2	**Housing combinations**		
	L* 	T* 	F**  D**  H***  R*** 
3	**Supplement to the valve type**		
	T	Radial seat, with lifting and divisible actuator without spray cleaning	
	U	Radial seat, with lifting and divisible actuator and spray cleaning	
4/5	**Nominal width (upper housing / lower housing)**		
	OD 2 ½"		
	OD 3"		
	OD 4"		
	OD 6"		
6	**Actuator type**		
	S	Air / Spring	
7	**Non-actuated position**		
	Z	Closed	
8	**Standard configuration with 4.8 bar air supply pressure for 6 bar product pressure**		
	Actuator (spring-to-close)	/ Lifting and divisible actuator	For nominal widths
	DG5	/CLMT5/MT-DA	OD 2 ½"
	EK6	/ELMT6/DL6-DA	OD 3", OD 4"
	SN6	/SLMT6/EL6-DA	OD 6"
	Actuator (spring-to-close)	/ Lifting and divisible actuator with quick air exhaust	For nominal widths
	EK6	/ELMT6S/DL6-DA	OD 3", OD 4"
	SN6	/SLMT6S/EL6-DA	OD 6"
9	**Valve seat version**		
	L0	Loose seat ring	
	V0	Welded seat ring (only for housing combinations H and R)	
10	**Seal material in contact with the product**		
	1	EPDM (FDA)	
	2	FKM (FDA)	
11	**Surface quality of the housing**		
	5	Inside $R_a \leq 0.8$ µm, valve completely ground	
12	**Connection fittings**		
	N	Welding end	
13	**Accessories**		
	/MS	Housing connection MS straight (for divisible actuator)	
	/T	Housing connection T (up to OD 3")	
	/T-S	Housing connection T-S (up to OD 3")	
	/U	Housing connection U (up to OD 4")	
	/U-S	Housing connection U-S (up to OD 4")	
	/TT	Tangential housing	
	/TL	Tangential left leakage housing	
	/TR	Tangential right leakage housing	
	/52/3A	Identification label sticker; valve design acc. to 3-A	
+			
14–19	**Control and feedback system**		
	▶ T.VIS	▶ Information and order code for T.VIS® A-15 control and feedback system see catalog GEA Valve Automation	

* Optionally with housing connection T or T-S (see position 13); only up to OD 3".
** Optionally with housing connection U or U-S (see position 13); only up to OD 4".
*** Optionally with housing connection MS (see position 13).

The code is composed as following, depending on the chosen configuration:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	MT			-	/	-	S	Z	-		-		-		5	N		+						

8 OPTIONS

GEA VARIVENT® Hygienic Seat Valves

Available Options

182	**Supplement to the Valve Type**
182	VARIVENT® Lifting Actuator
183	VARIVENT® Divisible Actuator
184	VARIVENT® Conversion Kit Bellows, Stainless Steel
185	VARIVENT® Conversion Kit Bellows, PTFE
186	VARIVENT® Conversion Kit D-Tec® for Shut-Off Valves
187	VARIVENT® Conversion Kit D-Tec® for Divert Valves
188	**Housing and Nominal Widths**
188	VARIVENT® Jacketed Valve Housing
190	VARIVENT® Housing with Increased Pressure Level
191	ECOVENT® Housing with Increased Pressure Level
192	Description of the Socket Orientation Key
194	Mix-matched Housing Combinations
198	Vertical Ports Suitable for Orbital Welding
200	Tangential Valve Housings
201	VARIVENT® Housing Connection Flange, Type MG, MN and MS
202	VARIVENT® Housing Connection Flange, Type U and U-S
203	VARIVENT® Housing Connection Flange, Type T and T-S
204	**Actuators**
204	VARIVENT® Actuator Air / Spring
206	ECOVENT® Actuator Air / Spring for Application with Feedback System
207	ECOVENT® Actuator Air / Spring for Application without Feedback System
208	VARIVENT® Actuator Air / Spring, Air-assisted
210	ECOVENT® Actuator Air / Spring, Air-assisted
212	VARIVENT® Booster Cylinder for Actuator Air /Spring
214	VARIVENT® Actuator Air / Air
215	VARIVENT® Manual Actuator
216	ECOVENT® Manual Actuator
218	Hydract® Actuation Technology COMING SOON
220	**Seal Materials**
220	FFKM
221	TEFASEP® gold
222	**Surface Qualities**
222	Inner and Outer Surface of the Housings
223	Electro-Polishing
224	**Connection Fittings**
224	Overview
226	VARIVENT® Flange Connection
228	Pipe Fitting acc. to DIN 11851
230	Hygienic Flange Connection acc. to DIN 11853-2
232	Clamp Connection (Tri-clamp)
234	**Accessories**
234	VARIVENT® Damping Cylinder
236	VARIVENT® Two-position-stop
237	VARIVENT® Two-position-stop with T.VIS®
238	VARIVENT® Limit Stop
240	VARIVENT® Sterile Lock for Single-seat valves
241	VARIVENT® Sterile Lock for Double-seat valves, Complete
242	VARIVENT® Sterile Lock for Double-seat valves (Balancer only)
244	VARIVENT® Steam Lock PMO
245	VARIVENT® Balancer Cleaning Device
246	VARIVENT® Leakage Connector
247	VARIVENT® Leakage Connector for Balancer
248	VARIVENT® Flush Valve
250	**Additional Options**
250	VARIVENT® CIP Connection for Double-seat and Double-seal valves
252	Test Report and Inspection Certificate
253	3-A Symbol
254	ATEX
255	ID Plates, TAG Numbers
256	Transport Device
257	Manual Emergency Actuator
258	LoTo DISK LOCK
259	LoTo AIR LOCK
260	**Actuator Selection**

Options – Supplement to the Valve Type VARIVENT® Lifting Actuator



Typical application and description

In a double-seat valve, in order to clean the two valve discs, inclusive seal surfaces and the leakage chamber, by using seat lifting, an additional lifting actuator is installed.

The lifting actuator is supplied with air via the two connections provided on the particular control and feedback system. Both valve discs can be activated separately using this lifting actuator.

The configuration and required size of lifting actuator is determined by GEA Tuchenhagen. When ordering, it is necessary to specify the prevailing product pressure, as well as the available air supply pressure.

Available nominal widths

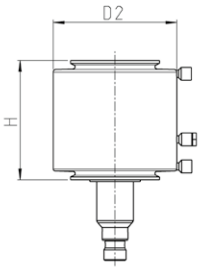
Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

Available valve types

Single-seat valves with shut-off function	–
Single-seat valves with divert function	–
Mixproof valves with shut-off function	D, B, R, MX, M
Piggable mixproof valves with shut-off function	L
Mixproof valves with divert function	Y
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	T, MT

Technical data

Material	1.4301 (AISI 304)
Outside surface	Turned, $R_a \leq 1.6$ µm



Type	Dimensions		
No. 8 in the order code	D2 [mm]	H [mm]	Weight [kg]
/ BL_	110	120	4.6
/ CL_	135	120	5.8
/ DL_	170	120	8.0
/ EL_	210	120	10.5
/ CL_5	135	130	4.9
/ DL_5	170	130	8.3
/ EL_5	210	130	10.8
/ EL_6	210	158	15.7
/ SL_6	260	158	21.0

The lifting actuator also has a supplement, depending on the valve type or nominal width.

Incorporation of the option in the order code and example

Position		Description of the order code for options	
3		Supplement to the valve type	
	L	With lifting actuator and spray cleaning	
	C	With lifting actuator without spray cleaning	
8		Actuator (spring-to-close)	/ Lifting actuator
	.../...	Required combination of main actuator / lifting actuator acc. to actuator selection sheet (e.g. EG/ELB)	

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	D	E	L	-	DN 80/80	-	S	Z	-	EG/ELB	-	L0	-	1	2	N	/52	+	0	0	0	0	0	M

Options – Supplement to the Valve Type
VARIVENT® Divisible Actuator



Typical application and description

The divisible actuator is available for double-seat shut-off valves. It allows the upper valve disc to be lifted when the valve is in the open position, i.e., the valve discs are separated in the open position. Typical applications are PMO shut-off valves type M_S/2.0 installed in CIP pipes or horizontally mounted 24/7 PMO tank bottom valve type MT.

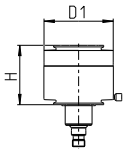
The divisible actuator is supplied with air via the connection provided on the particular control and feedback system. On valves with divisible actuator, the divisible actuator is located between the main actuator and the lantern. On valves with both lifting and divisible actuator, it is a combined part located between the main actuator and the lantern.

The configuration and required size of divisible actuator is determined by GEA Tuchenhagen. When ordering, it is necessary to specify the prevailing product pressure, as well as the available air supply pressure, or to select an appropriate combination from one of the actuator selection sheets.

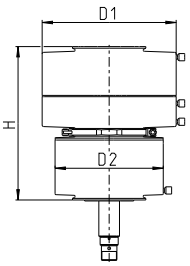
Available nominal widths		
Inch OD	OD	1 ½" – 6"

Available valve types	
Single-seat valves with shut-off function	–
Single-seat valves with divert function	–
Mixproof valves with shut-off function	M
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	MT

Technical data	
Material	1.4301 (AISI 304)
Outside surface	Turned, $R_a \leq 1.6$ µm



Type	Dimensions			
No. 8 in the order code	D1 [mm]	D2 [mm]	H [mm]	Weight [kg]
/BLMN...	110	–	105	3.3
/CLMN...	135	–	115	4.5
/ELMN...	210	–	139	12.5



Type	Dimensions			
No. 8 in the order code	D1 [mm]	D2 [mm]	H [mm]	Weight [kg]
/CLMT...	135	135	232	10.0
/ELMT...	210	170	283	22.5
/SLMT...	260	210	297	34.5

The lifting actuator also has a supplement, depending on the valve type or nominal width.

Incorporation of the option in the order code and example

Position		Description of the order code for options	
3		Supplement to the valve type	
	S	With divisible actuator	
	T	Radial seat, with lifting and divisible actuator without spray cleaning	
	U	Radial seat, with lifting and divisible actuator and spray cleaning	
8		Actuator (spring-to-close)	/ Lifting actuator
	.../...	Required combination of main actuator / lifting actuator acc. to actuator selection sheet (e.g. EK6/ELMT6/DL6-DA)	

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	M	E	S	-	OD3"/OD3"	-	S	Z	-	DF/CLMN56-DA	-	V1	-	1	5	N	/S/3A/52	+	0	0	0	0	0	M

Options – Supplement to the Valve Type VARIVENT® Conversion Kit Bellows, Stainless Steel



Typical application and description

Conversion of a VARIVENT® hygienic valve type N into a sterile version within existing systems.

For more sensitive applications, single-seat valves in existing systems can be modified by using bellows, e.g. for use in highly hygienic applications. Not only the bellows but also a lantern, adapter and securing clip are supplied for the conversion.

Please contact GEA Aseptomag AG if you are planning new aseptic applications!

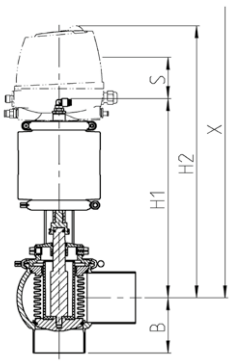
Available nominal widths		
Metric	DN	25–100
Inch OD	OD	1" – 4"

Available valve types	
Single-seat valves with shut-off function	N
Single-seat valves with divert function	–
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	N

Technical data	
Recommended flow direction	From bottom to top
Material in contact with the product	1.4404 (AISI 316L)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	EPDM (FDA)
Air supply pressure	Max. 6 bar (max. 87 psi)
Product pressure	Max. 6 bar (max. 87 psi)

Order numbers of conversion kit:

	Housing	Dimensions			Valve		Article number	
Nominal width	B [mm]	H1 [mm]	H2 [mm]	X [mm]	Stroke S [mm]	Weight [kg]	Material EPDM	Material FKM
DN 25	58	248	377	462	5.2	7	221-004755	221-004765
DN 40	64	289	418	503	7.0	10	221-004757	221-004767
DN 50	70	295	424	509	7.3	15	221-004758	221-004768
DN 65	83	309	438	583	10.1	14	221-004760	221-004770
DN 80	91	317	446	591	15.0	15	221-004762	221-004772
DN 100	100	358	487	632	21.2	22	221-004764	221-004774
OD 1"	56.00	246	375	375	3.2	7	221-004756	221-004766
OD 1 ½"	62.50	288	417	417	5.5	10	221-004757	221-004767
OD 2"	68.75	294	423	423	10.0	14	221-004758	221-004768
OD 2 ½"	80.00	294	423	423	14.4	14	221-004760	221-004770
OD 3"	86.50	313	442	442	19.1	14	221-004763	221-004773
OD 4"	98.75	357	486	486	27.5	22	221-004764	221-004774

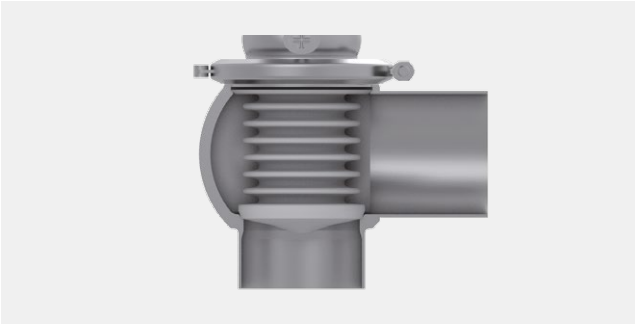


Order as a complete valve by incorporating the option in the order code and example

Position	Description of the order code for options
3	Supplement to the valve type
A/S	Bellows stainless steel

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	L	A/S	-	DN 80/80	-	S	Z	-	RG	-	L0	-	1	5	N	/52	+	0	0	0	0	0	M

Options – Supplement to the Valve Type VARIVENT® Conversion Kit Bellows, PTFE



Typical application and description

Conversion of a VARIVENT® hygienic valve type N into a sterile version within existing systems.

For more sensitive applications, single-seat valves in existing systems can be modified by using a bellows, e.g. for use in highly hygienic applications. Not only the bellows but also a lantern, adapter and securing clip are supplied for the conversion.Product versions with 3-A certificate are optionally available.

Please contact GEA Aseptomag AG if you are planning new aseptic applications!

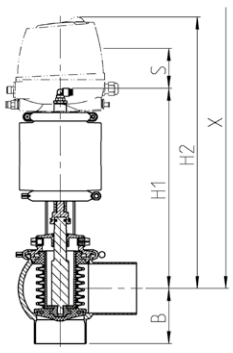
Available nominal widths		
Metric	DN	25–100
Inch OD	OD	1"–4"

Available valve types	
Single-seat valves with shut-off function	N
Single-seat valves with divert function	–
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	N

Technical data	
Recommended flow direction	From bottom to top
Material in contact with the product	1.4404 (AISI 316L) Bellows PTFE (FDA)
Material not in contact with the product	1.4301 (AISI 304)
Seal material in contact with the product	PTFE (FDA)
Air supply pressure	Max. 6 bar (max. 87 psi)
Product pressure	Max. 6 bar (max. 87 psi)

Order numbers of conversion kit:

	Housing	Dimensions			Valve		Article number
Nominal width	B [mm]	H1 [mm]	H2 [mm]	X [mm]	Stroke S [mm]	Weight [kg]	Material PTFE
DN 25	58.00	248	377	462	6.4	7	221-004775
DN 40	64.00	289	418	503	11.2	9	221-004777
DN 50	70.00	295	424	509	14.8	10	221-004778
DN 65	83.00	309	438	583	19.3	14	221-004779
DN 80	91.00	317	446	591	19.8	14	221-004780
DN 100	100.00	358	487	632	21.2	20	221-004782
OD 1"	56.00	246	375	460	3.2	7	221-004776
OD 1 ½"	62.50	288	417	502	5.5	9	221-004777
OD 2"	68.75	294	423	508	10.0	10	221-004778
OD 2 ½"	80.00	306	435	580	14.4	14	221-004779
OD 3"	86.50	313	442	587	19.1	14	221-004781
OD 4"	98.75	357	486	631	27.5	21	221-004782



Order as a complete valve by incorporating the option in the order code and example

Position	Description of the order code for options
3	Supplement to the valve type
A/P	Bellows PTFE

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	L	A/P	-	DN 80/80	-	S	Z	-	RG	-	L0	-	1	5	N	/52	+	0	0	0	0	0	M

Options – Supplement to the Valve Type VARIVENT® Conversion Kit D-tec® for Shut-off Valves



Typical application and description

From Hygienic to UltraClean – D-tec® conversion kit for VARIVENT®

The D-tec® conversion kit makes it possible to convert existing systems from a hygienic stem diaphragm sealing to the D-tec® diaphragm for achieving UltraClean production conditions. Using components that prevent exchange with the exterior atmosphere simplifies the production of demanding and sensitive products and advances product shelf life.

D-tec® valves are used especially in the food, beverages, biotech and dairy industries. Product versions with 3-A certificate are optionally available.

Please contact GEA Aseptomag AG if you are planning new aseptic applications!

Available nominal widths		
Metric	DN	25–100
Inch OD	OD	1" – 4"

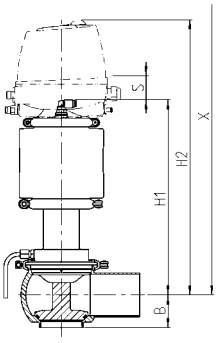
Available valve types	
Single-seat valves with shut-off function	N
Single-seat valves with divert function	–
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	N

Technical data		
Recommended flow direction		From bottom to top
Material	Housing	1.4404 (AISI 316L)
	Diaphragm	D-tec®
	Valve seat seal	EPDM, FKM, HNBR, TEFASEP® gold
	Housing seal	EPDM, FKM, HNBR
	Not in contact with product	1.4301 (AISI 304)
Operating temperature		Max. 135 °C (275 °F)
Sterilization temperature		Max. 150 °C (302 °F) for 30 min
Air supply pressure		6 bar (87 psi)
Product pressure		5 bar (73 psi)

Order numbers of conversion kit + seal set

	Housing	Dimensions			Valve		Article number*		
Nominal width	B [mm]	H1 [mm]	H2 [mm]	X [mm]	Stroke S [mm]	conversion kit	Seal set (material)		
							EPDM	FKM	HNBR
DN 25	31	248	412	493	10	221-743.01	221-741.01	221-741.05	221-741.09
DN 40	39	293	457	558	17	221-743.02	221-741.02	221-741.06	221-741.10
DN 50	41	299	463	578	17	221-743.03	221-741.02	221-741.06	221-741.10
DN 65	52	307	471	619	25	221-743.04	221-741.03	221-741.07	221-741.11
DN 80	60	314	478	649	25	221-743.05	221-741.03	221-741.07	221-741.11
DN 100	70	358	522	722	30	221-743.06	221-741.04	221-741.08	221-741.12
OD 1"	29	246	410	485	10	221-743.07	221-741.01	221-741.05	221-741.09
OD 1 ½"	39	291	455	553	17	221-743.08	221-741.02	221-741.06	221-741.10
OD 2"	42	297	461	575	17	221-743.09	221-741.02	221-741.06	221-741.10
OD 2 ½"	54	304	468	612	25	221-743.10	221-741.03	221-741.07	221-741.11
OD 3"	54	310	474	631	25	221-743.11	221-741.03	221-741.07	221-741.11
OD 4"	69	357	521	718	30	221-743.12	221-741.04	221-741.08	221-741.12

* For every conversion kit a suitable seal set must be included in the order.



Options – Supplement to the Valve Type VARIVENT® Conversion Kit D-tec® for Divert Valves



Available nominal widths

Metric	DN	25–100
Inch OD	OD	1" – 4"

Available valve types

Single-seat valves with shut-off function	–
Single-seat valves with divert function	W
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	–

Technical data

Recommended flow direction		From bottom to top
Material	Housing	1.4404 (AISI 316L)
	Diaphragm	D-tec®
	Valve seat seal	EPDM, FKM, HNBR, TEFASEP® gold
	Housing seal	EPDM, FKM, HNBR
	Not in contact with product	1.4301 (AISI 304)
Operating temperature		Max. 135 °C (275 °F)
Sterilization temperature		Max. 150 °C (302 °F) for 30 min
Air supply pressure		6 bar (87 psi)
Product pressure		5 bar (73 psi)

Typical application and description

From Hygienic to UltraClean – D-tec® conversion kit for VARIVENT®

The D-tec® conversion kit makes it possible to convert existing systems from a hygienic stem diaphragm sealing to the D-tec® diaphragm for achieving UltraClean production conditions. Using components that prevent exchange with the exterior atmosphere simplifies the production of demanding and sensitive products and advances product shelf life.

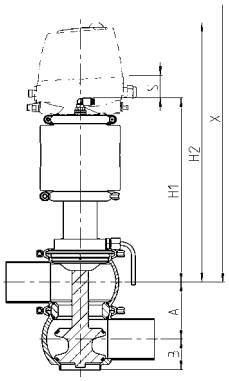
D-tec® valves are used especially in the food, beverages, biotech and dairy industries. Product versions with 3-A certificate are optionally available.

Please contact GEA Aseptomag AG if you are planning new aseptic applications!

Order numbers of conversion kit + seal set

Nominal width	Housing B [mm]	Housing A [mm]	Dimensions H1 [mm]	Dimensions H2 [mm]	Dimensions X [mm]	Valve Stroke S [mm]	Article number* conversion kit	Seal set (material) EPDM	Seal set (material) FKM	Seal set (material) HNBR
DN 25	31	50.0	248	412	593	8	221-744.01	221-742.01	221-742.05	221-742.09
DN 40	39	62.0	293	457	682	14	221-744.02	221-742.02	221-742.06	221-742.10
DN 50	41	74.0	299	463	726	14	221-744.03	221-742.02	221-742.06	221-742.10
DN 65	52	96.0	337	501	841	22	221-744.04	221-742.03	221-742.07	221-742.11
DN 80	60	111.0	344	508	901	22	221-744.05	221-742.03	221-742.07	221-742.11
DN 100	70	130.0	358	522	982	25	221-744.06	221-742.04	221-742.08	221-742.12
OD 1"	29	46.0	246	410	577	8	221-744.07	221-742.01	221-742.05	221-742.09
OD 1 ½"	39	59.0	291	455	671	14	221-744.08	221-742.02	221-742.06	221-742.10
OD 2"	42	71.5	297	461	718	14	221-744.09	221-742.02	221-742.06	221-742.10
OD 2 ½"	54	90.0	334	498	822	22	221-744.10	221-742.03	221-742.07	221-742.11
OD 3"	54	103.0	340	504	867	22	221-744.11	221-742.03	221-742.07	221-742.11
OD 4"	69	127.5	357	521	973	25	221-744.12	221-742.04	221-742.08	221-742.12

* For every conversion kit a suitable seal set must be included in the order.



D-tec® is a trade mark of GEA Aseptomag registered in Switzerland.

Options – Housing and Nominal Widths
VARIVENT® Jacketed Valve Housing



Typical application and description

For keeping chocolate or margarine fluid and for cooling ice cream.

For heating or cooling products, a hot or cold medium is passed through the housing jacket in the opposite flow direction.

The product range includes jacketed valve housings with both one and two horizontal ports. However, the housings cannot be supplied for valves with mix-matched nominal widths or a welded seat ring.

Available nominal widths

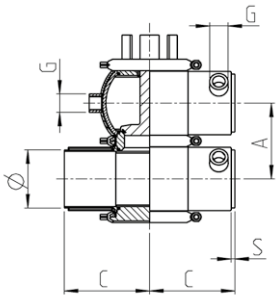
Metric	DN	25–100
Inch OD	OD	1" – 4"

Available valve types

Single-seat valves with shut-off function	N, U, N / ECO
Single-seat valves with divert function	W, X, W / ECO
Mixproof valves with shut-off function	D, B, R
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	Y
Mixproof shut-off valves for CIP and gas applications	K
Tank bottom valves	N, N/ECO, U, T

Technical data

Material		1.4404 (AISI 316L)
Max. product pressure	10 bar	DN 25 – 50, OD 1" – 2"
	6 bar	DN 65 – 100, OD 2 ½" – 4"
Jacket pressure resistance		3.5 bar
Surface in contact with the product		$R_a \leq 0.8$ µm
Outside surface		Matt blasted
Valve seat version		Clamped connection



					Dimensions	Weight	
Nominal width	Ø [mm]	C [mm]	A [mm]	S [mm]	G [mm]	single vertical ports [kg]	double vertical ports [kg]
DN 25	29 × 1.5	90	50	5	¼"	0.5	0.7
DN 40	41 × 1.5	90	62	5	¼"	0.8	1.1
DN 50	53 × 1.5	90	74	5	¼"	1.0	1.1
DN 65	70 × 2.0	125	96	5	½"	2.5	2.7
DN 80	85 × 2.0	125	111	5	½"	3.0	3.2
DN 100	104 × 2.0	125	130	5	½"	4.1	4.4
OD 1"	25.4 × 1.65	90	46.0	5	¼"	0.5	0.6
OD 1 ½"	38.1 × 1.65	90	59.0	5	¼"	0.8	0.9
OD 2"	50.8 × 1.65	90	71.5	5	¼"	1.0	1.1
OD 2 ½"	63.5 × 1.65	125	90.0	5	½"	2.3	2.5
OD 3"	76.2 × 1.65	125	103.0	5	½"	2.7	2.8
OD 4"	101.6 × 2.11	125	127.5	5	½"	4.1	4.0

Incorporation of the option in the order code and example

Position		Description of the order code for options
13		Accessoires
	/25	Jacketed valve housings

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19					
Code	D	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	N	/25	/52	+	0	0	0	0	0	M

Options – Housing and Nominal Widths VARIVENT® Housing with Increased Pressure Level

Typical application and description

For static use of valves with increased product pressure. For increasing the strength, the half rings on the valve housings are made of cast material and the housings with nominal widths DN 100 / OD 4" are made of a higher-quality material.

IMPORTANT: The differential pressure between the product chambers on both sides of the valve disc is not allowed to exceed 10 bar during switching of the valve. The actuator size of the valve must be selected based on the product data.

Available nominal widths and pressure range

Nominal width	Pressure range (PS)	
	Standard	Option
DN 25	16	20
DN 40	16	20
DN 50	16	20
DN 65	16	20
DN 80	10	20
DN 100	10	20***
DN 125	10	–
DN 150	10	–
OD 1"	16	20
OD 1 ½"	16	20
OD 2"	16	20
OD 2 ½"	16	20
OD 3"	10	20
OD 4"	10	20***
OD 6"	10	–
IPS 2"	16	20
IPS 3"	10	20
IPS 4"	10	–
IPS 6"	10	–

*** on request, only with loose seat ring

Available valve types

Single-seat valves with shut-off function	N, U**
Single-seat valves with divert function	W**, X**
Mixproof valves with shut-off function	D, B, R, K
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	Y
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	–

Technical data

Material	1.4404 (AISI 316L)	DN 25 – 80, OD 1" – 3"
	1.4462	DN 100, OD 4"
Pressure range	PS 20 bar	TS 0/+150 °C
Pressure range jacketed housing	PS 16 bar	DN 25 – 80, OD 1" – 3"; TS 0/+150 °C
Valve seat version	Clamped or welded* housing connection	

* not for jacketed housings
** not available for valve type U_R, W_R and X_R

	Dimensions		
Nominal width	Ø [mm]	C [mm]	A [mm]
DN 25	29 × 1.5	90	50
DN 40	41 × 1.5	90	62
DN 50	53 × 1.5	90	74
DN 65	70 × 2.0	125	96
DN 80	85 × 2.0	125	111
DN 100	104 × 2.0	125	130
OD 1"	25.4 × 1.65	90	46.0
OD 1 ½"	38.1 × 1.65	90	59.0
OD 2"	50.8 × 1.65	90	71.5
OD 2 ½"	63.5 × 1.65	125	90.0
OD 3"	76.2 × 1.65	125	103.0
OD 4"	101.6 × 2.11	125	127.5
IPS 2"	60.3 × 2.00	114.3	81
IPS 3"	88.9 × 2.30	152.5	115

Incorporation of the option in the order code and example

Position		Description of the order code for options	
13		Accessoires	
	🔍	/37	PS 20 bar
		/38	PS 16 bar (jacketed valve housing)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19					
Code	N	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	N	/37 🔍	/52	+	0	0	0	0	0	M

Options – Housing and Nominal Widths ECOVENT® Housing with Increased Pressure Level

Typical application and description

For static use of valves with increased product pressure.

IMPORTANT: The differential pressure between the product chambers on both sides of the valve disc is not allowed to exceed 10 bar during switching of the valve. The actuator size of the valve must be selected based on the product data.

Available nominal widths and pressure range

Nominal width	Pressure range (PS)	
	Standard	Option
DN 10	16	25
DN 15	16	25

Available valve types

Single-seat valves with shut-off function	N/ECO
Single-seat valves with divert function	W/ECO
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	–

Technical data

Material	1.4435 (AISI 316L)	DN 10–15
Pressure range	PS 25 bar*	TS 0/+150 °C

* not available for valves with bellow

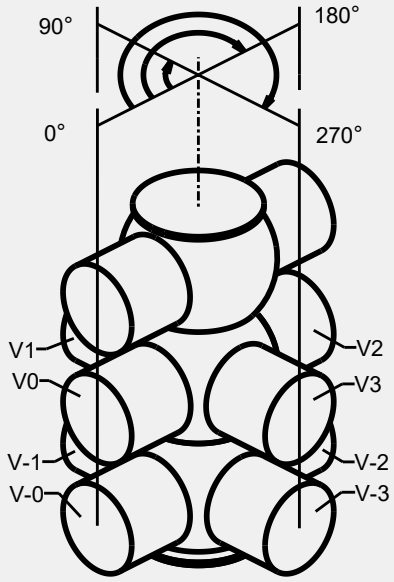
	Dimensions		
Nominal width	Ø [mm]	C [mm]	A [mm]
DN 10	13.0 × 1.50	65.0	44.0
DN 15	19.0 × 1.50	65.0	47.0

Incorporation of the option in the order code and example

Position	Description of the order code for options
13	Accessoires
	/39 PS 25 bar

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	L	/ECO	-	DN 10	-	E	Z	-	64/4	-	V0	-	1	2	N	/39	/52	+	0	0	0	0	0	M

Options – Housing and Nominal Widths
Description of the Socket Orientation Key



Shut-off valves

V	0	Valve seat version	L	Loose seat ring / clamp connection
			V	Welded seat ring or fixed vertical port
V	0	Rotation angle upper to lower housing	0	Port orientation 0°
			1	Port orientation 90°
			2	Port orientation 180°
			3	Port orientation 270°
V	0 0	Valve seat version	L	Loose seat ring / Clamp connection
			V	Welded seat ring

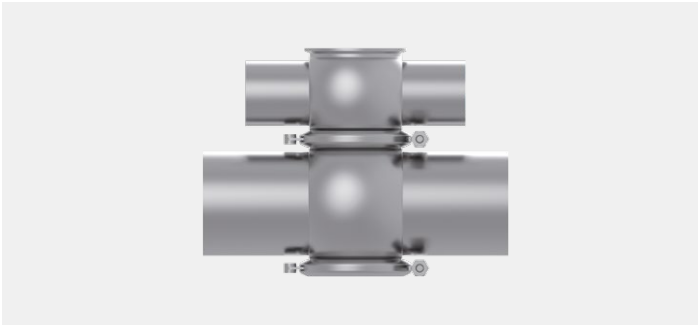
Divert Valves

V	0 0	Valve seat version	L	Loose seat ring / clamp connection
			V	Welded seat ring
V	0 0	Rotation angle upper to centre housing	0	Port orientation 0°
			1	Port orientation 90°
			2	Port orientation 180°
			3	Port orientation 270°
V	0 0	Rotation angle upper to lower housing	0	Port orientation 0°
			1	Port orientation 90°
			2	Port orientation 180°
			3	Port orientation 270°

Seat ring design	Rotation angle upper to bottom housing	A	B	C	E
Loose seat ring					
L	0	•	•	•	•
Welded saet ring					
V	0				
V	1				
V	2	corresponds to V0		corresponds to V0	corresponds to V0
V	3	corresponds to V1		corresponds to V1	corresponds to V1

Seat ring design	Rotation angle upper to centre housing	Rotation angle upper to bottom housing	K	V	P	O	W	Y	X	Z	U	M	N	G
Loose seat ring														
L	0	0	•	•	•	•	•	•	•	•	•	•	•	•
Welded saet ring														
V	0	0												
V	0	1	–	–	–	–								
V	0	2	–	–	–	–		corre-sponds to V00		corre-sponds to V00		corre-sponds to V00	corre-sponds to V00	corre-sponds to V00
V	0	3	–	–	–	–		corre-sponds to V01		corre-sponds to V01		corre-sponds to V01	corre-sponds to V01	corre-sponds to V01
V	1	0												
V	1	1	–	–	–	–								
V	1	2	–	–	–	–		corre-sponds to V10		corre-sponds to V10		corre-sponds to V10	corre-sponds to V10	corre-sponds to V10
V	1	3	–	–	–	–		corre-sponds to V11		corre-sponds to V11		corre-sponds to V11	corre-sponds to V11	corre-sponds to V11
V	2	0		corre-sponds to V00	corre-sponds to V00	corre-sponds to V00			corre-sponds to V00	corre-sponds to V00	corre-sponds to V00	corre-sponds to V00	corre-sponds to V00	corre-sponds to V00
V	2	1	–	–	–	–			corre-sponds to V01	corre-sponds to V01	corre-sponds to V03	corre-sponds to V01	corre-sponds to V01	corre-sponds to V01
V	2	2	–	–	–	–		corre-sponds to V20	corre-sponds to V02	corre-sponds to V00	corre-sponds to V00	corre-sponds to V00	corre-sponds to V00	corre-sponds to V00
V	2	3	–	–	–	–		corre-sponds to V21	corre-sponds to V03	corre-sponds to V01	corre-sponds to V01	corre-sponds to V01	corre-sponds to V01	corre-sponds to V01
V	3	0		corre-sponds to V10	corre-sponds to V10	corre-sponds to V10			corre-sponds to V10	corre-sponds to V10	corre-sponds to V12	corre-sponds to V10	corre-sponds to V10	corre-sponds to V10
V	3	1	–	–	–	–			corre-sponds to V11	corre-sponds to V11	corre-sponds to V13	corre-sponds to V11	corre-sponds to V11	corre-sponds to V11
V	3	2	–	–	–	–		corre-sponds to V30	corre-sponds to V12	corre-sponds to V12	corre-sponds to V10	corre-sponds to V10	corre-sponds to V10	corre-sponds to V10
V	3	3	–	–	–	–		corre-sponds to V31	corre-sponds to V13	corre-sponds to V13	corre-sponds to V11	corre-sponds to V11	corre-sponds to V11	corre-sponds to V11

Options – Housing and Nominal Widths
Mix-Matched Housing Combinations



Typical application and description

Many mix-matched housings are already available. For technical reasons, however, a mix-matched combination is not possible for all valve types and all housing combinations! If required, please contact GEA Tuchenhagen to ask about the feasibility.

The first mentioned nominal width indicates the upper valve housing, the second one is the nominal width of the lower valve housing. In divert valves, both upper housings are configured with the same nominal width. The larger housing in the mix-matched combination must always be configured as a housing with two ports.

Available nominal widths

Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

Available valve types

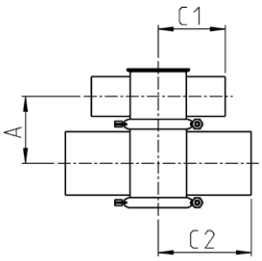
Single-seat valves with shut-off function	N, U, N / ECO
Single-seat valves with divert function	W, X, W / ECO
Mixproof valves with shut-off function	D, B, R, MX*, M*
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	K
Tank bottom valves	–

* Only welded valve seat version

Technical data

Material	1.4404 (AISI 316L)
Product pressure	10 bar
Valve seat version	Clamped or welded valve seat version

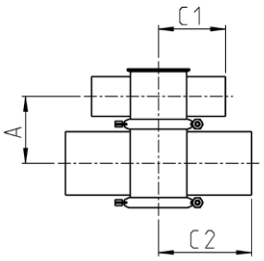
Options – Housing and Nominal Widths
Mix-Matched Housing Combinations



Upper housing	DN 25			DN 40			DN 50			DN 65		
	A	C1	C2	A	C1	C2	A	C1	C2	A	C1	C2
Lower housing												
DN 25	50	90	90	56	90	90	62	90	90	70	125	90
DN 40	56	90	90	62	90	90	68	90	90	76	125	90
DN 50	62	90	90	68	90	90	74	90	90	82	125	90
DN 65	70	90	125	76	90	125	82	90	125	96	125	125
DN 80	77.5	90	125	83.5	90	125	89.5	90	125	103.5	125	125
DN 100	87	90	125	93	90	125	99	90	125	113	125	125
DN 125	–	–	–	105.5	90	125	111.5	90	125	125.5	125	125
DN 150	–	–	–	118	90	150	124	90	150	138	125	150

Upper housing	OD 1"			OD 1 ½"			OD 2"			OD 2 ½"		
	A	C1	C2	A	C1	C2	A	C1	C2	A	C1	C2
Lower housing												
OD 1"	46	90	90	52.5	90	90	58.75	90	90	65	125	90
OD 1 ½"	52.5	90	90	59	90	90	65.25	90	90	71.5	125	90
OD 2"	58.75	90	90	65.25	90	90	71.5	90	90	77.75	125	90
OD 2 ½"	65	90	125	71.5	90	125	77.75	90	125	90	125	125
OD 3"	71.5	90	125	78	90	125	84.25	90	125	96.5	125	125
OD 4"	83.75	90	125	90.25	90	125	96.5	90	125	108.75	125	125
OD 6"	–	–	–	116.5	90	150	122.75	90	150	133.5	125	150

Upper housing	IPS 2"		
	A	C1	C2
Lower housing			
IPS 2"	58.75	90	90
IPS 3"	65.25	90	90
IPS 4"	71.5	90	90
IPS 6"	77.75	90	125



Upper housing	DN 80			DN 100			DN 125			DN 150		
	A	C1	C2	A	C1	C2	A	C1	C2	A	C1	C2
Lower housing												
DN 25	77.5	125	90	87	125	90	–	–	–	–	–	–
DN 40	83.5	125	90	93	125	90	105.5	125	90	118	150	90
DN 50	89.5	125	90	99	125	90	111.5	125	90	124	150	90
DN 65	103.5	125	125	113	125	125	125.5	125	125	138	150	125
DN 80	111	125	125	120.5	125	125	133	125	125	145.5	150	125
DN 100	120.5	125	125	130	125	125	142.5	125	125	155	150	125
DN 125	133	125	125	142.5	125	125	155	150	150	–	–	–
DN 150	145.5	125	150	155	125	150	167.5	150	150	180	150	150

Upper housing	OD 3"			OD 4"						OD 6"		
	A	C1	C2	A	C1	C2				A	C1	C2
Lower housing												
OD 1"	71.5	125	90	83.75	125	90				–	–	–
OD 1 ½"	78	125	90	90.25	125	90				116.5	150	90
OD 2"	84.25	125	90	102.5	125	90				122.75	150	90
OD 2 ½"	96.5	125	125	115.25	125	125				133.5	150	125
OD 3"	103	125	125	115.25	125	125				140	150	125
OD 4"	115.25	125	125	127.5	125	125				152.25	150	150
OD 6"	140	125	150	152.25	125	150				177	150	150

Upper housing	IPS 3"			IPS 4"						IPS 6"		
	A	C1	C2	A	C1	C2				A	C1	C2
Lower housing												
IPS 2"	95	152.5	114.5	107.5	152.5	114.5				133.5	152.5	114.5
IPS 3"	115	152.5	152.5	121.5	152.5	152.5				153.5	152.5	152.5
IPS 4"	127.5	152.5	152.5	140	152.5	152.5				166	152.5	152.5
IPS 6"	153.5	152.5	152.5	166	152.5	152.5				192	152.5	152.5

Incorporation of the option in the order code and example

Position	Description of the order code for options	
4/5	.../...	Nominal width (upper housing/lower housing)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	E		-	OD 2"/OD 3"	-	S	Z	-	CD	-	L0	-	1	2	N	/52	+	0	0	0	0	0	M

Options – Housing and Nominal Widths Vertical Ports Suitable For Orbital Welding



Typical application and description

The orbital welding process is used in pipeline construction when high weld qualities have to be achieved under controllable conditions.

The extended vertical port (dimension B) makes it possible to weld in the housing using welding tongs or an orbital welding head.

Available nominal widths

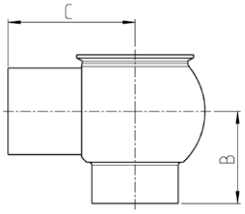
Metric	DN	25–150
Inch OD	OD	1" – 4"
Inch IPS	IPS	2" – 4"

Technical data

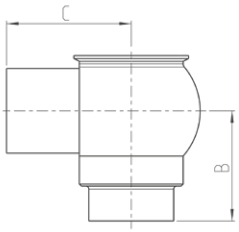
Material	1.4404 (AISI 316L)
Product pressure	10 bar

Available valve types

Single-seat valves with shut-off function	N, N / ECO
Single-seat valves with divert function	W, W / ECO
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	K
Tank bottom valves	N, N / ECO



Valve type N, N/ECO, W and W/ECO



Valve type K

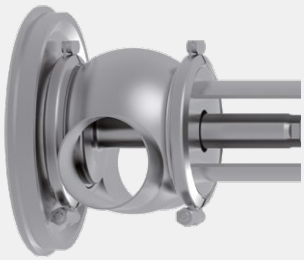
				Dimensions
Nominal width	Ø [mm]	Valve type N, N/ECO, W and W/ECO B [mm]	Valve type K B_K [mm]	C [mm]
DN 25	29 × 1.50	58.0	51.0	90.0
DN 40	41 × 1.50	64.0	59.0	90.0
DN 50	53 × 1.50	70.0	61.0	90.0
DN 65	70 × 2.00	83.0	72.0	125.0
DN 80	85 × 2.00	90.5	80.0	125.0
DN 100	104 × 2.00	100.0	90.0	125.0
OD 1"	25.4 × 1.65	56.0	49.0	90.0
OD 1 ½"	38.1 × 1.65	62.5	59.0	90.0
OD 2"	50.8 × 1.65	68.8	62.0	90.0
OD 2 ½"	63.5 × 1.65	80.0	74.0	125.0
OD 3"	76.2 × 1.65	86.5	74.0	125.0
OD 4"	101.6 × 2.11	98.8	89.0	125.0
IPS 2"	60.3 × 2.00	73.5	–	114.3
IPS 3"	88.9 × 2.30	92.5	–	152.5
IPS 4"	114.3 × 2.30	105.5	–	152.5

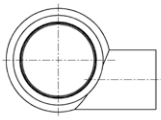
Incorporation of the option in the order code and example

Position	Description of the order code for options	
13	Accessoires	
	/28	Lower housing port suitable for orbital welding

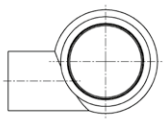
Position	1	2	3		4/5		6	7		8		9		10	11	12	13				14 to 19					
Code	N	T		-	DN 80/80	-	S	Z	-	CD	-	V0	-	1	2	N	/28	/52	+	0	0	0	0	0	M

Options – Housing and Nominal Widths
Tangential Valve Housings

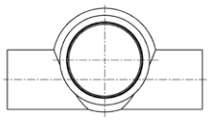




Tangential right
(view from the direction of the actuator)



Tangential left
(view from the direction of the actuator)



Tangential straight
(view from the direction of the actuator)

Typical application and description

Horizontal tank valves or horizontally installed valves are configured so the connection piping can be completely drained.

Tangential valve housings are provided with eccentrically welded-on vertical ports, as a result, no fluid remains in the housing sphere of the horizontal installation.

Various nominal widths are available. If required, please contact GEA Tuchenhagen to ask about the dimensions and feasibility.

Available nominal widths
On request

Available valve types	
Single-seat valves with shut-off function	N, U, N / ECO
Single-seat valves with divert function	W, X,W / ECO
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	N, U, N / ECO, MT

Technical data	
Material	1.4404 (AISI 316L)
Product pressure	10 bar
Valve seat version	Clamped or welded housing connection

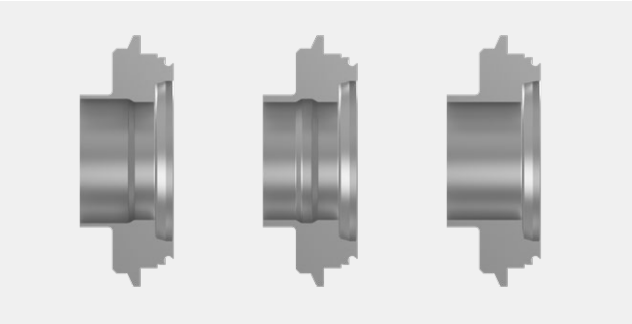
	Offset from center of housing ball for tangential ports
Nominal width	Offset [mm]
DN 25	on request
DN 40	22.00
DN 50	19.00
DN 65	27.00
DN 80	23.50
DN 100	30.75
DN 125	on request
DN 150	43.00
OD 1"	18.25
OD 1 ½"	22.50
OD 2"	19.75
OD 2 ½"	27.85
OD 3"	25.00
OD 4"	32.05
OD 6"	43.50

Incorporation of the option in the order code and example

Position		**Description of the order code for options**	
13		Accessoires	
		/ TR	Tangential right
		/ TL	Tangential left
		/TT	Tangential straight

Position	1	2	3		4/5		6	7		8		9		10	11	12	**13**			14 to 19					
Code	N	T		-	DN 80/80	-	S	Z	-	CD	-	V0	-	1	2	N	/52	/TT	+	0	0	0	0	0	M

Options – Housing and Nominal Widths VARIVENT® Housing Connection Flange, Type MG, MN and MS

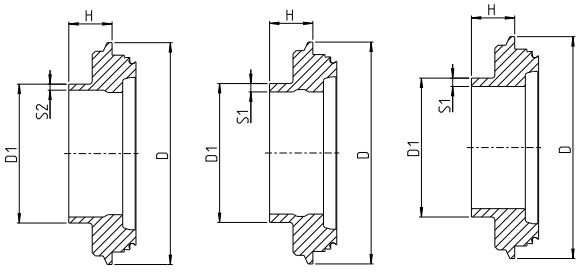


The housing connection flange types MG, MN, and MS are used for the connection of PMO bottom valves without dead zones and are welded to the pipe connection at the bottom of the vessel.

Type MG and MN are suitable for installation of VARIVENT® PMO double-seat bottom valves MT 24/7 with lifting actuator, while type MS is designed for connecting VARIVENT® PMO double-seat bottom valves MT 24/7 with a lifting and divisible actuator.

Technical data of the standard version

Material in contact with the product	Type MG, MN, MS	1.4404 (AISI 316L)
Seal material		EPDM, FKM, HNBR
Operating temperature		−10 °C up to 150 °C
Product pressure	OD 2" – OD 6"	10 bar
Surface in contact with the product		$R_a \leq 0.8$ µm
Outside surface		Ground
Certificates		FDA



Type MG Type MN Type MS

Dimensions

Nominal width of the valve	D [mm]	D1 [mm]	S1 [mm]	S2 [mm]	H [mm]
OD 2"	115	60.3	3.2	1.65	27.7
OD 2 1/2", OD 3"	142	88.9	5.4	3.85	27.7
OD 4"	169	114.3	4.1	2.55	27.7
OD 6"	255	168.3	8.6	7.05	44.7

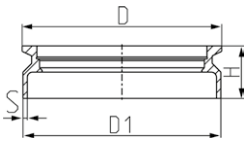
Options – Housing and Nominal Widths VARIVENT® Housing Connection Flange, Type U and U-S



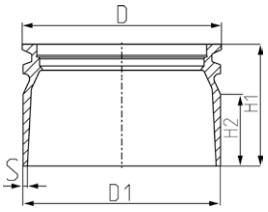
Housing connection flanges are used to connect tank bottom valves without dead zones and are welded into the vessel wall or the vessel bottom. Type U-S is suitable for installation in the tank bottom, since it can be adjusted in inclination.

Technical data of the standard version

Material in contact with the product	Type U	1.4404 (AISI 316L)
	Type U-S	1.4404 (AISI 316 L)
Seal material		EPDM, FKM, HNBR
Operating temperature		–10 °C up to 150 °C
Product pressure	DN 25 – DN 80 OD 1" – OD 3"	16 bar
	DN 100 – DN 150 OD 4" – OD 6"	10 bar
Surface in contact with the product		$R_a \leq 0.8$ µm
Outside surface		Ground
Wall thickness t		2; 2.5; 3; 4 mm
Certificates		FDA



Type U



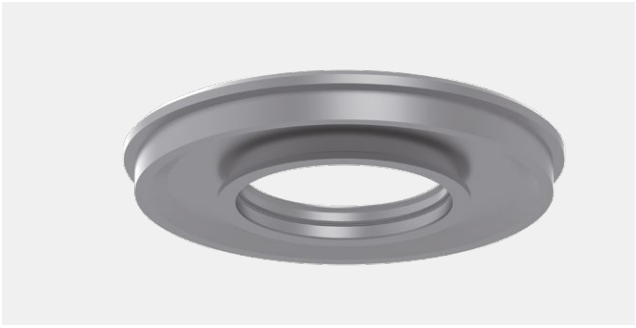
Type U-S

Dimensions

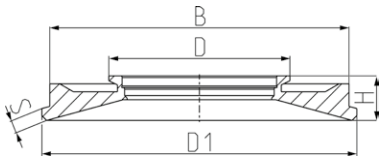
Nominal width of the valve			D [mm]	S [mm]	H [mm]	D1 [mm]	H1 [mm]	H2* [mm]
DN 25	OD 1"		66	2	25	70	65	40
DN 40/50	OD 1 ½", OD 2"	IPS 2"	84	2	25	85	65	40
DN 65/80	OD 2 1/2", OD 3"	IPS 3"	115	2.5	30	114	70	40
DN 100	OD 4"	IPS 4"	142	2	30	154	70	40
DN 125			169	3.0	30	184	70	40
DN 150	OD 6"	IPS 6"	193	4.0	30	212	70	30

* Possibility of the adjustment to the vessel

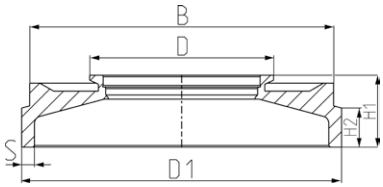
Options – Housing and Nominal Widths VARIVENT® Housing Connection Flange, Type T and T-S



Housing connection flanges are used to connect tank bottom valves frontflush and are welded into the vessel wall or the vessel bottom. Type T-S can be adjusted to the inclination or rounding of the vessel.



Type T



Type T-S

Technical data of the standard version

Material in contact with the product	Type T	1.4404 (AISI 316 L)
	Type T-S	1.4404 (AISI 316L)
Seal material		EPDM, FKM, HNBR
Operating temperature		−10 °C up to 150 °C
Product pressure		10 bar
Surface in contact with the product		$R_a \leq 0.8$ µm
Outside surface		Ground
Certificates		FDA

Type T

	Dimension				
Nominal width of the valve	D [mm]	B [mm]	D1 [mm]	H [mm]	S [mm]
DN 25	66	135	145	24.0	Max. 8
DN 50/40	84	155	165	24.5	Max. 8
DN 65/80	115	190	200	28.0	Max. 8
DN 100	142	215	225	27.5	Max. 8

Type T-S

	Dimension					
Nominal width of the valve	D [mm]	B [mm]	D1 [mm]	H1 [mm]	H2 [mm]	S [mm]
DN 25	66	135	145	41	25	Max. 8
DN 50/40	84	155	165	41	25	Max. 8
DN 65/80	115	190	200	45	25	Max. 8
DN 100	142	215	225	45	25	Max. 8

Options – Actuators
VARIVENT® Pneumatic Actuator Air/Spring



Typical application and description
As one of the basic elements of the VARIVENT® modular system, the actuator air / spring is used for performing the valve movement in all VARIVENT® valves.

The air supply is connected to the particular control and feedback system and led via the internal air channel under the piston surface of the actuator. Simply by reversing the actuator, it is possible to convert the fail-safe position of the valve (in single-seat valves) from spring-to-close (NC) to spring-to-open (NO). In these cases, or if the product or air supply pressure differs from the standard, check the definition of the actuator size based on the order code and the selection sheets onwards.

Reliable switching actuators are available for all relevant valve types with a control air pressure from minimum 4 bar. Selection tables for choosing the required actuator size can be found at the end of this section.

Available nominal widths

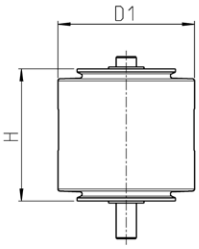
Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

Available valve types

Single-seat valves with shut-off function	N, U, N / ECO
Single-seat valves with divert function	W, X,W / ECO
Mixproof valves with shut-off function	D, B, R, MX, M
Piggable mixproof valves with shut-off function	L
Mixproof valves with divert function	Y, FDD
Mixproof shut-off valves for CIP and gas applications	C, K
Tank bottom valves	N, U, T, MT

Technical data

Material	1.4301 (AISI 304)
Outside surface	Turned, $R_a \leq 1.6$ µm
Air supply pressure	Max. 8 bar



Type			Dimensions
No. 8 in the order code	D1 [mm]	H [mm]	Weight [kg]
AA	99	95	3.2
BA	110	130	4.3
BB	110	130	4.5
BD	110	130	5.1
CA	135	130	5.7
CB	135	130	5.8
CD	135	130	6.2
CF	135	130	7.0
DB	170	160	8.0
DD	170	160	8.7
DF	170	160	9.6
DG	170	160	10.8
DH	170	160	11.4
ED	210	160	11.2
EF	210	160	12.1
EG	210	160	13.2
EH	210	160	13.8

Type			Dimensions
No. 8 in the order code	D1 [mm]	H [mm]	Weight [kg]
BD5	110	140	5.1
DD5	170	160	9.0
BE5	110	140	5.2
DF5	170	170	10.4
DG5	170	170	11.1
ED5	210	160	12.3
EF5	210	170	12.9
EG5	210	170	13.5
EH5	210	170	14.1
DF6	170	199	13.5
EF6	210	246	20.5
EG6	210	246	21.7
EH6	210	246	24.2
EK6	210	246	25.5
SG6	260	246	26.0
SH6	260	246	28.4
SK6	260	246	29.8
SM6	260	246	33.4
SN6	260	246	35.8

Incorporation of the option in the order code and example

Position		Description of the order code for options
6		Actuator type
	S	Air/Spring
8		Actuator
	...	Acc. to actuator selection scheme (e.g. EF)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	E		-	DN 80/80	-	S	Z	-	EF	-	L0	-	1	2	N	/52	+	0	0	0	0	0	M

Options – Actuators
ECOVENT® Pneumatic Actuator Air/Spring for Application with Feedback System



Typical application and description

As one of the basic elements of the ECOVENT® valves, the air/spring actuator type ECO-E is used for performing the valve movements in all ECOVENT® valves.

The air supply is connected to the particular control and feedback system and led via the internal air channel under the piston surface of the actuator. Simply by reversing the actuator, it is possible to convert the fail-safe position of the valve (in single-seat valves) from spring-to-close (NC) to spring-to-open (NO). In these cases, or if the product or air supply pressure differs from the standard, check the definition of the actuator size based on the order code and the selection sheets onwards. In addition, the actuator permits additional pressurization of the spring chamber with up to 6 bar air supply, in order to increase the closing force by this method. To pressurize the spring chamber with air, it is recommended that a NOT-element should be used in the control and feedback system T.VIS® (see catalog GEA Valve Automation).

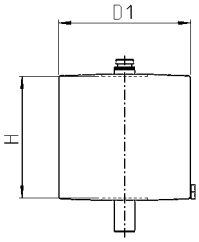
Reliable switching actuators are available for all relevant valve types with a control air pressure from 4 bar. Selection tables for choosing the required actuator size can be found at the end of this section.

Available nominal widths		
Metric	DN	25–100
Inch OD	OD	1" – 4"

Available valve types	
Single-seat valves with shut-off function	N/ECO
Single-seat valves with divert function	W/ECO
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	N/ECO

Technical data	
Material	1.4301 (AISI 304)
Outside surface	Turned, $R_a \leq 1.6$ µm
Air supply pressure	Max. 8 bar

Type	Dimensions		
No. 8 in the order code	D1 [mm]	H [mm]	Weight [kg]
EAA	85	91	1.9
EBA	104	119	2.8
EBB	104	119	2.9
ECA	129	119	3.9
ECB	129	119	4.0
ECD	129	119	4.6
EDB	170	119	6.6
EDD	170	119	7.2
EDF	170	119	8.2



Incorporation of the option in the order code and example

Position		Description of the order code for options	
6		Actuator type	
	🔍	E	Air/Spring
8		Actuator	
	🔍	...	Acc. to actuator selection scheme (e.g. EDF)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	E	/ECO	-	DN 80/80	-	E 🔍	Z	-	EDF 🔍	-	L0	-	1	2	N	/52	+	0	0	0	0	0	M

Options – Actuators
ECOVENT® Pneumatic Actuator Air/Spring for Application without Feedback System



Typical application and description

A basic element of ECOVENT® valves, the actuator air / spring of the ECO-E/US type is used for performing the valve movements in all ECOVENT® valves without control top.

Simply by reversing the actuator, it is possible to convert the fail-safe position of the valve from spring-to-close (NC) to spring-to-open (NO). In these cases, or if the product or air supply pressure differs from the standard, check the definition of the actuator size based on the selection sheets.

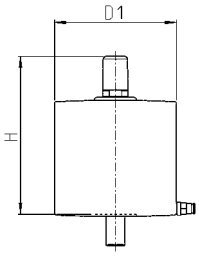
Reliable switching actuators are available for all relevant valve types with a control air pressure from 4 bar. Selection tables for choosing the required actuator size can be found at the end of this section.

Available nominal widths		
Metric	DN	25–100
Inch OD	OD	1" – 4"

Available valve types	
Single-seat valves with shut-off function	N/ECO
Single-seat valves with divert function	W/ECO
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	N/ECO

Technical data	
Material	1.4301 (AISI 304)
Outside surface	Turned, $R_a \leq 1.6$ µm
Air supply pressure	Max. 8 bar

Type	Dimensions		
No. 8 in the order code	D1 [mm]	H [mm]	Weight [kg]
EAA	85	140	1.9
EBA	104	168	2.8
EBB	104	168	2.9
ECA	129	168	3.9
ECB	129	168	4.0
ECD	129	168	4.6
EDB	170	168	6.6
EDD	170	168	7.2
EDF	170	168	8.2



Incorporation of the option in the order code and example

Position		Description of the order code for options	
6		Actuator type	
	E		Air/Spring
8		Actuator	
	...		Acc. to actuator selection scheme (e.g. ZDD)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	E	/ECO	-	DN 80/80	-	E	Z	-	ZDD	-	L0	-	1	2	N	/52	+	0	0	0	0	0	M

Options – Actuators
VARIVENT® Pneumatic Actuator Air/Spring, Air-assisted



Typical application and description
For increasing the holding force of the actuator.

In addition to the function method of the VARIVENT® actuator air/spring, this actuator has another air connection to the spring side of the actuator. This connection enables the spring-side piston surface to be pressurized by compressed air.

To pressurize the spring side with air, it is recommended that a NOT-element should be used in the control and feedback system T.VIS® (see catalog GEA Valve Automation). For increasing the holding force of the actuator.

Available nominal widths

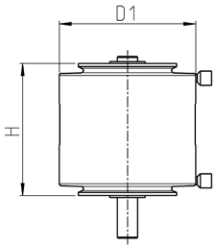
Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

Available valve types

Single-seat valves with shut-off function	N, U
Single-seat valves with divert function	W, X
Mixproof valves with shut-off function	D, B
Piggable mixproof valves with shut-off function	L
Mixproof valves with divert function	Y
Mixproof shut-off valves for CIP and gas applications	C, K
Tank bottom valves	N, U

Technical data

Material	1.4301 (AISI 304)
Outside surface	Turned, $R_a \leq 1.6$ µm
Air supply pressure stroke	Max. 8 bar
Air supply pressure air-supporting	Max. 8 bar (actuator ZBB – ZDH) Max. 6 bar (actuator ZEF – ZSN6)



Type			Dimensions
No. 8 in the order code	D1 [mm]	H [mm]	Weight [kg]
ZBB	110	130	4.2
ZCB	135	130	5.3
ZCD	135	130	5.9
ZDD	170	160	9.8
ZDF	170	160	9.8
ZDF/V	170	198	12.5
ZDG	170	160	10.6
ZDH	170	160	15.6
ZEF	210	160	12.1
ZEF/V	210	198	20.0
ZEG	210	160	13.6
ZEH	210	160	14.1
ZEK6	210	246	25.2
ZSH6	260	246	29.3
ZSK6	260	246	30.7
ZSN6	260	246	38.8

Incorporation of the option in the order code and example

Position		Description of the order code for options	
6		Actuator type	
	🔍	Z	Air/Spring
8		Actuator	
	🔍	...	Acc. to actuator selection scheme (e.g. ZDD)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	E		-	DN 80/80	-	🔍 Z	Z	-	🔍 ZDD	-	L0	-	1	2	N	/52	+	0	0	0	0	0	M

Options – Actuators
ECOVENT® Pneumatic Actuator Air/Spring, Air-assisted



Typical application and description
For increasing the holding force of the actuator.

In addition, the actuator permits additional pressurization of the spring chamber with up to 6 bar air supply, in order to increase the closing force by this method.

To pressurize the spring side with air, it is recommended that a NOT-element should be used in the control and feedback system T.VIS® (see catalog GEA Valve Automation).

Simply by reversing the actuator, it is possible to convert the fail-safe position of the valve from spring-to-close (NC) to spring-to-open (NO). In these cases, or if the product or air supply pressure differs from the standard, check the definition of the actuator size based on the selection sheets.

Available nominal widths

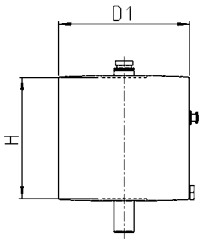
Metric	DN	25–100
Inch OD	OD	1" – 4"

Available valve types

Single-seat valves with shut-off function	N/ECO
Single-seat valves with divert function	W/ECO
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	N/ECO

Technical data

Material	1.4301 (AISI 304)
Outside surface	Turned, $R_a \leq 1.6$ µm
Air supply pressure	Max. 8 bar
Air supply pressure air-supporting	Max. 6 bar



Type			Dimensions
No. 8 in the order code	D1 [mm]	H [mm]	Weight [kg]
EAA	85	91	1.9
EBA	104	119	2.8
EBB	104	119	2.9
ECA	129	119	3.9
ECB	129	119	4.0
ECD	129	119	4.6
EDB	170	119	6.6
EDD	170	119	7.2
EDF	170	119	8.2

Incorporation of the option in the order code and example

Position		Description of the order code for options
6		Actuator type
	E	Air/Spring
8		Actuator
	...	Acc. to actuator selection scheme (e.g. L+EDD)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	E	/ECO	-	DN 80/80	-	E	Z	-	L+EDD	-	L0	-	1	2	N	/52	+	0	0	0	0	0	M

Options – Actuators
VARIVENT® Booster Cylinder for Pneumatic Actuator Air/Spring



Typical application and description
For increasing the size of the active pneumatic surface (piston surface) of the actuator.

The booster cylinder can be mounted in addition to the actuator so that the actuator can also be operated with low air supply pressure. In spring-to-close valves (valve type U with NO), the booster cylinder is installed below the actuator and in spring-to-open valves (valve type U with NC) between the actuator and control and feedback system. The booster cylinder is automatically supplied with compressed air via the internal air channel, an additional hosing in not necessary.

Available nominal widths

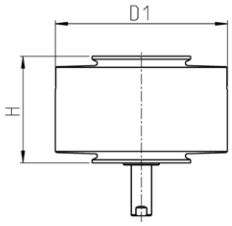
Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

Available valve types

Single-seat valves with shut-off function	N, U
Single-seat valves with divert function	W, X
Mixproof valves with shut-off function	D, B, R
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	Y
Mixproof shut-off valves for CIP and gas applications	C, K
Tank bottom valves	N, U

Technical data

Material	1.4301 (AISI 304)
Outside surface	Turned, $R_a \leq 1.6$ µm
Air supply pressure	Max. 8 bar



Type	Dimensions		
	D1 [mm]	H [mm]	Weight [kg]
D	168	105	6.0
E	208	130	9.9
E6	208	130	9.9

The actuator sizes R..., S... and T... as well as T...6 and U...6 (position 8 in the code) resulting from the actuator selection schemes are a combination of an actuator type S air / spring and a booster cylinder. All symbols following the first letter relate to the actuator size. The combination is composed as follows:

No. 8 in the order code	Composed of	
	Actuator	Booster cylinder
RF	DF	D
RG	DG	D
RH	DH	D
SF	EF	D
SG	EG	D
SH	EH	D
TF	EF	E
TG	EG	E
TH	EH	E

No. 8 in the order code	Composed of	
	Actuator	Booster cylinder
TF6	EF6	E6
TG6	EG6	E6
TH6	EH6	E6
TK6	EK6	E6
UG6	SG6	E6
UH6	SH6	E6
UK6	SK6	E6
UN6	SN6	E6
UM6	SM6	E6

Incorporation of the option in the order code and example

Position	Description of the order code for options
8	Actuator
	... Acc. to actuator selection scheme (e.g. TK6)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	E		-	DN 80/80	-	S	Z	-	TK6	-	L0	-	1	2	N	/52	+	0	0	0	0	0	M

Options – Actuators
VARIVENT® Pneumatic Actuator Air/Air



Available nominal widths		
Metric	DN	25–100
Inch OD	OD	1"–4"
Inch IPS	IPS	2"–4"

Available valve types	
Single-seat valves with shut-off function	N, U
Single-seat valves with divert function	W, X
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	N, U

Technical data	
Material	1.4301 (AISI 304)
Outside surface	Turned, $R_a \leq 1.6$ µm
Air supply pressure	Max. 8 bar

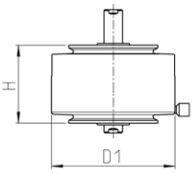
Typical application and description

In the air / air actuator, both end positions are realized using pressurized air at the particular side of the piston. The actuator is not equipped with a spring in the inside.

If there is a failure with the air supply, the valve will remain in its particular position or its current position will be determined by the product pressure acting on the valve disc. For this reason, it is not permitted for an air / air actuator to be used on double-seat valves, because if there is a power failure the valve will not automatically return to its fail-safe position (closed position), but rather, the resulting position would be determined randomly based on the process conditions (product pressure or flow).

If an air / air actuator is required, please send your request to GEA Tuchenhagen stating the prevailing pressures (air supply and product pressure), nominal width and required valve type.

Type	Dimensions		
No. 8 in the order code	D1 [mm]	H [mm]	Weight [kg]
CJ	133	85	4.9



Incorporation of the option in the order code and example

Position		Description of the order code for options
6		Actuator type
	J	Actuator air/air
7		Non-actuated position
	–	indifferent
8		Actuator
	CJ	

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	E		-	DN 80/80	-	J	–	-	CJ	-	L0	-	1	2	N	/52	+	0	0	0	0	0	M

Options – Actuators
VARIVENT® Manual Actuator



Typical application and description

For manual operation and locking of the valve disk position of VARIVENT® valves.

The manual actuator is designed as a handwheel up to the nominal width DN 100 or 4". With larger nominal widths, the manual actuator is designed as a crank. The manual actuator can be locked in any position using a lock nut.

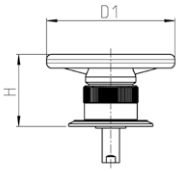
One full turn of the manual actuator results in a valve stroke of 11 mm, irrespective of the nominal width.

Available nominal widths		
Metric	DN	25–100
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

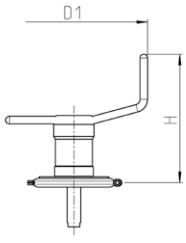
Available valve types	
Single-seat valves with shut-off function	N
Single-seat valves with divert function	W, X
Mixproof valves with shut-off function	D, R
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	Y
Mixproof shut-off valves for CIP and gas applications	K
Tank bottom valves	N

Technical data	
Material	1.4301 (AISI 304)
Outside surface	Turned, $R_a \leq 1.6$ µm

		Type	Dimensions		
Nominal width		No. 8 in the order code	D1 [mm]	H [mm]	Weight [kg]
DN 25 – DN 50	1" – 2"	G1	148	107	2.7
DN 65 – DN 100	2 ½" – 4"	G2	198	113	3.1
DN 125 – DN 150	6"	G6	532	239	5.8



G1 and G2



G6

Incorporation of the option in the order code and example

Position		Description of the order code for options	
6		Actuator type	
	🔍	G	Manual actuator with locking
8		Actuator	
	🔍	...	Acc. to size (e.g. G2)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	E		-	DN 80/80	-	G 🔍	Z	-	G2 🔍	-	L0	-	1	2	N	/52	+	0	0	0	0	0	M

Options – Actuators
ECOVENT® Manual Actuator



Available nominal widths

Metric	DN	10–15

Available valve types

Single-seat valves with shut-off function	N_ECO DN 10, DN 15
Single-seat valves with divert function	W_ECO DN 10, DN 15
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	–

Technical data

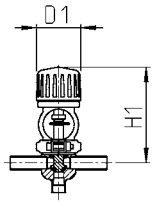
Material	PPH

Typical application and description

For manual operation of ECOVENT® valves.

This manual actuator is designed as a handwheel for the nominal widths DN 10 and DN 15.

		Type	Dimensions		
Nominal width		No. 8 in the order code	D1 [mm]	H [mm]	Weight [kg]
DN 25 – DN 50	1" – 2"	G1	148	107	2.7
DN 65 – DN 100	2 ½" – 4"	G2	198	113	3.1
DN 125 – DN 150	6"	G6	532	239	5.8



Incorporation of the option in the order code and example

Position		Description of the order code for options
6		Actuator type
	H	Manual actuator

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	L	/ECO	-	DN 10/10	-	H	Z	-	–	-	V0	-	1	2	N	/52	+	0	0	0	0	0	M

Options – Hydraulic actuator Hydract® actuation technology



Typical application and description

As an extension of the proven VARIVENT modular system, GEA Hydract technology provides an integrated water-hydraulic actuation solution for hygienic valve applications. The actuator is designed for precise and reliable valve movement using pressurized water instead of compressed air. The system is fully integrated into existing VARIVENT interfaces, maintaining the established hygienic design principles without requiring changes to system architecture, suppliers or service structures.

The closed hydraulic system is connected to the corresponding control and monitoring unit and supplies the actuator with pressurized water, ensuring precise piston movement and accurate valve positioning. The hydraulically locked actuator enables stable positioning, is fully resistant to pressure shocks and the risk of unintended product mixing.

In contrast to conventional actuator designs, the Hydract® system operates without a mechanical spring. The fail-safe position of the actuator can be individually defined and is ensured by the stored pressure within the utility system. This principle allows for greater flexibility in defining safe valve states while maintaining a high level of operational reliability.

The Hydract® technology allows precise and programmable control of valve positions and supports advanced process functions such as regulating, inline blending and continuous dosing. Thanks to its digital capabilities, the actuator can be seamlessly integrated into automated process environments, enabling continuous monitoring and optimized control.

Compared to conventional pneumatic systems, the hydraulic actuation significantly reduces energy consumption while increasing process safety and operational reliability. In addition, the actuator design is largely standardized, resulting in a reduced number of variants. This simplification provides clear advantages for maintenance, spare parts management and overall system availability.

The technology is available for selected VARIVENT® valve types, with availability continuously being expanded to additional valve types, and is particularly suited for demanding applications in the food, beverage and pharmaceutical industries, where flexibility, hygiene and process accuracy are essential.

Further information on the technology will be available in the upcoming GEA HYDRACT® Actuation Technology brochure.

Available nominal widths

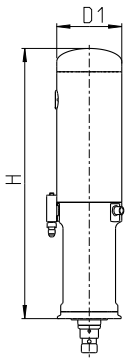
Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

Available valve types

Single-seat valves with shut-off function	N
Single-seat valves with divert function	W
Mixproof valves with shut-off function	D, R
Tank bottom valves	N

Technical data

Material metallic	1.4301 (AISI 304)
Material housing	ABS
Outside surface	Ra ≤ 1.6 µm
Product pressure	up to 10 bar (73 psi)
Hydraulic pressure	50 bar (725 psi)
Type of communication	IO-Link, ASi
Protection class	IP69k
Visualization	LED light ring



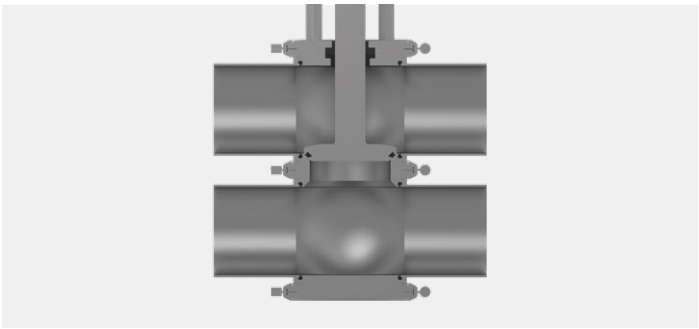
Type	Description	corresponding valve size	Dimensions		
No. 8 in the order code			D1 [mm]	H [mm]	Weight [kg]
HSs	Hydract single-seat small	DN25/OD 1" - DN50/OD 2"	99	320	7.6
HSm	Hydract® single-seat medium	DN65/OD 2,5" - DN100/OD 4"	99	352	8.6
HSl	Hydract® single-seat large	DN125 - DN150/OD 6"	119	375	12.8
HDs	Hydract® double-seat small	DN25/OD 1"	99	380	9.1
HDm	Hydract® double-seat medium	DN40/OD 1,5" - DN100/OD 4"	99	412	11.0
HDl				457	17.5

Incorporation of the option in the order code and example

Position		Description of the order code for options	
6		Actuator type	
	H		Hydraulic
8		Actuator	
	...		defined selection based on valve type and size
14		Feedback location	
	HYD		Hydract® feedback system
17		Type of interface	
	I		IO-Link

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	E		-	DN 80/80	-	H	Z	-	HSM	-	L0	-	1	2	N	/52	+	HYD			I		

Options – Seal Materials
FFKM



Typical application and description

Perfluorinated rubber (FFKM) is an elastomer that is used in areas where particularly high thermal and/or chemical resistance properties are required.

FFKM seal material combines the chemical properties of PTFE and the mechanical properties of Viton, and is characterized by a wide range of application temperatures, very good resistance to fluids, low-pressure deformation and minimum swelling.

The mixing constituents of our FFKM gasket material comply with US Plastic Class VI and have been tested for acude systemic toxicity, intrataneous reactivity and intramuscular implantation in accordance with USP-NF 87 and 88. The FFKM material includes components, which are not part of the FDA 'White List'.

The resistance of the sealing material depends on the type and temperature of the product being transported. The contact time with certain products can negatively effect the service life of the seals.

Detailed information on the properties of the sealing material can be found in the table with the material properties.

Available nominal widths		
Metric	DN	10–100
Inch OD	OD	1" – 4"
Inch IPS	IPS	2" – 4"

Available valve types	
Single-seat valves with shut-off function	N, N / ECO, U
Single-seat valves with divert function	W, W / ECO, X
Mixproof valves with shut-off function	D
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	C, K
Tank bottom valves	N, N / ECO, U

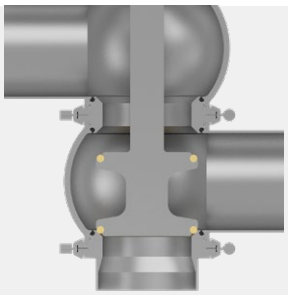
Technical data	
Operating temperature	–10 °C to 230 °C (14 °F to 446 °F)
Properties	See table of seal material properties
Certificates	USP-Standards (USP Class IV, NF 87 and 88) Biological reactivity of medical devices ISO 10993-5:2009 Material free of BSE/TSE risk

Incorporation of the option in the order code and example

Position	Description of the order code for options
10	Seal material in contact with the product
	F FFKM

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	D	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	F	2	N	/52	+	0	0	0	0	0	M

Options – Seal Materials
Tefasep® gold



Available nominal widths		
Metric	DN	25–100
Inch OD	OD	1" – 4"

Available valve types	
Single-seat valves with shut-off function	N*
Single-seat valves with divert function	W*
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	N*

* Only available with standard or manual actuator

Technical data	
Operating temperature	–10 °C to 160 °C (14 °F to 320 °F)
Product pressure	maximum 6 bar (87 psi)
Properties	See table of seal material properties
Certificates	FDA (21 CFR § 177.1550), European Union (EG 1935/2004, EG 10/2011), 3-A-Standard (Number 20 to 24), USP-Standards (USP Class IV – 121 °C)

Typical application and description

TEFASEP® gold easily copes with sterilization processes at temperatures up to 160 °C and can also handle abrasive and aggressive media without any problems which is essential for pharmaceutical or biotechnological applications. The hard, stable material compound is impressive not only because of its chemical resistance but its robustness also prevents the cold flow familiar with other thermoplastics and as a result contributes significantly to process stability. Together with the valve design, the material ensures a minimum contact surface between the housing and the seal which, in turn, increases the cleaning capability of the process system.

Unlike an elastomer seal, the thermoplastic uniquely requires a cleaning cycle of 80 °C. As a result the O ring adjusts to the valve seat and seals the system hermetically. The new TEFASEP® gold differs from the well approved TEFASEP® gasket for GEA Aseptomag valves by its bronze-golden color.

Incorporation of the option in the order code and example

Position		Description of the order code for options
13		Seat gasket; product touched
	/07	TEFASEP® gold (FDA)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	N	/07	+	0	0	0	0	0	M

Options – Surface Qualities
Inner and Outer Surface of the Housings





Typical application and description

Deviating from the quality of the standard surface quality, different surface qualities are available up to a medium roughness for surfaces in contact with the product of $R_a \leq 0.4$ µm. The outer surface of the housings is matt blasted as standard. Optionally, it can also be supplied ground.

Housings that should comply with the 3-A standard are produced as standard with an inner surface of $R_a \leq 0.8$ µm with ground welds and a blasted outer surface. If a configuration with a ground outer surface is required, it is necessary to select not only option /3-A (position 13) but also the corresponding surface quality 3 (position 11).

Incorporation of the option in the order code and example

Position		Description of the order code for options
11		Surface quality of the housing
	2	Inside $R_a \leq 0.8$ µm, outside matt blasted
	3	Inside $R_a \leq 0.8$ µm, outside ground
	5	Inside $R_a \leq 0.8$ µm, outside valve completely ground (only for valve type FDD, M, MC and MT)
	8	Inside $R_a \leq 0.4$ µm, outside ground

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	D	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	8	N	/52	+	0	0	0	0	0	M

Options – Surface Qualities
Electro-Polishing



Typical application and description

One process for improving the surface quality is electrochemical polishing, in which peaks on the surfaces of material are abraded by a galvanic process, resulting in an evened-out elevation profile.

This surface treatment makes it much less likely for contaminating substances and micro-organisms to stick to the surface. In addition, the smooth surface improves corrosion resistance by formation of an inert oxide layer.

Electropolishing of the housings is only available for housings that are outside grounded (order code position 11).

Incorporation of the option in the order code and example

Position		Description of the order code for options
13		Accessories
	/E	Surface finish electrolytically polished

Position	1	2	3		4/5		6	7		8		9		10	11	12	13				14 to 19					
Code	R	E		-	DN 80/80	-	S	Z	-	DD5	-	L0	-	1	8	N	/E	/52	+	0	0	0	0	0	M

Options – Connection Fittings Overview

Typical application and description
The valve housings can be specified with a welded-on connection fitting. To find which connection fittings are available, please refer to the list on the following pages.

If the vertical ports within a valve do have different configurations, please inform us of the designation for the particular housing port including the required connection fitting (as in the example below). The seal which may be included corresponds to the sealing material of the valve.

Connection fittings

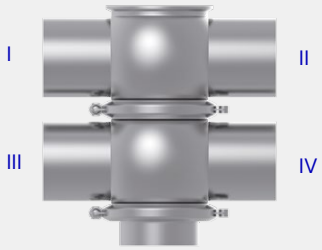
TK	VARIVENT® flange connection, groove flange on housing
TN	VARIVENT® groove flange incl. O-ring and connecting parts
TF	VARIVENT® flange
GK	Pipe fitting, DIN 11851, male end on housing
GO	Male end SC, DIN 11851, incl. seal ring G
KO	Liner SD, DIN 11851, incl. groove nut
ASK	Hygienic flange connection, DIN 11853-2
NFK	Hygienic groove flange, DIN 11853-2
BFK	Hygienic flange, DIN 11853-2
CO	Clamp connection / TRI-Clamp, DIN 32676 (DN)/ ISO 2852 (OD; length: 28.5 mm)



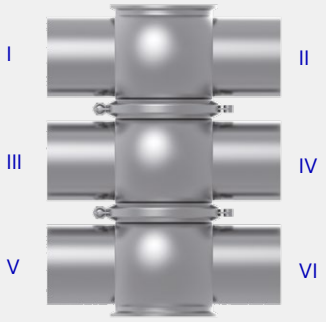
Valves with one housing and vertical port



Valves with two housings



Valves with three housings



Valves with three housings

Example

Housing port	Connection fitting
I	TN
II	TF
III	TK
IV	
V	
VI	
VII	

Incorporation of the option in the order code and example

Position		Description of the order code for options
12		Connection fittings
	J	Valve with connection fittings (required connection fitting according to list above, please state separately)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	A		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	J	/52	+	0	0	0	0	0	M

Options – Connection Fittings VARIVENT® Flange Connection



Complete connection including bolts and nuts (TK)



Groove flange (TN), including connecting elements and seal ring



Flange (TF)

Typical application and description

An O-ring is used for sealing the VARIVENT® flange connection, and is given a defined compression by a metal stop. The O-ring is also protected by the special geometry of the recess from being pulled out at high flow rates.

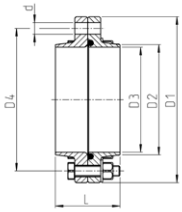
The VARIVENT® flange connection (TK) can be ordered either as a complete connection including bolts and nuts (TK) or a groove flange (TN)/flange (TF) as a connection fitting on a vertical port. If a complete connection is ordered as the connection fitting, the groove flange is welded onto the housing. The groove flange (TN) contains not only the O-ring but also the required connecting elements.

Available nominal widths

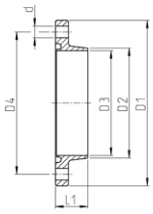
Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

Technical data

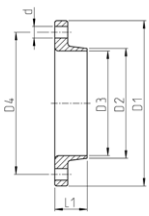
Material	1.4404
Surface in contact with the product	$R_a \leq 0.8$ µm
Certificates	3.1/AD2000W2
Seal materials	EPDM (FDA), FKM (FDA), HNBR (FDA)
Maximum pressure	DN 25–65, OD 1"–2 ½": 16 bar
	DN 80–150, OD 3"–6": 10 bar



TK = VARIVENT® flange connection



TN = VARIVENT® groove flange



TF = VARIVENT® flange

						Dimensions		O-ring	
Nominal width	D1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	d [mm]	L [mm]	L1 [mm]	[mm]	PS
DN 25	70	30.0	26.0	53	4 × Ø 9	50	25	25.0 × 5.0	16
DN 40	82	42.0	38.0	65	4 × Ø 9	50	25	36.0 × 5.0	16
DN 50	94	54.0	50.0	77	4 × Ø 9	50	25	47.0 × 5.0	16
DN 65	113	70.0	66.0	95	8 × Ø 9	50	25	62.0 × 5.0	16
DN 80	128	85.0	81,0	110	8 × Ø 9	50	25	75.0 × 5.0	10
DN 100	159	104.0	100.0	137	8 × Ø 11	50	25	92.0 × 5.0	10
DN 125	183	129.0	125.0	161	8 × Ø 11	50	25	115.0 × 5.0	10
DN 150	213	154.0	150.0	188	8 × Ø 14	60	30	134.2 × 5.7	10
OD 1"	66	25.5	22.0	49	4 × Ø 9	50	25	22.0 × 5.0	16
OD 1 ½"	79	38.5	35.0	62	4 × Ø 9	50	25	33.5 × 5.0	16
OD 2"	91	51.0	47.5	74	4 × Ø 9	50	25	45.0 × 5.0	16
OD 2 ½"	106	63.5	60.0	88	8 × Ø 9	50	25	56.0 × 5.0	16
OD 3"	119	76.5	73.0	101	8 × Ø 9	50	25	68.0 × 5.0	10
OD 4"	156	102.0	97.5	134	8 × Ø 11	50	25	90.0 × 5.0	10
OD 6"	211	152.4	146.5	186	8 × Ø 11	60	30	134.0 × 5.7	10
IPS 2"*	101	60.5	57.0	84	4 × Ø 9	50	25	53.0 × 5.0	16
IPS 3"*	132	89.0	85.0	114	4 × Ø 9	50	25	78.0 × 5.0	10
IPS 4"	169	114.0	110.0	147	4 × Ø 9	50	25	102.0 × 5.0	10
IPS 6"**	227	168.0	162.0	202	8 × Ø 9	60	25	149.0 × 5.7	10

* only EPDM ** only EPDM and FKM

Incorporation of the option in the order code and example

Position		Description of the order code for options
12		Connection fittings
	J	Valve with connection fittings (please state option TK, TN or TF separately with reference to the connection)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	J	/52	+	0	0	0	0	0	M

Options – Connection Fittings
Pipe Fitting acc. to DIN 11851



Complete connection (GK)



Male end SC (GO), including seal ring G



Liner SD (KO), including groove nut

Typical application and description

A seal ring G is used for sealing the pipe fitting acc. to DIN 11851. The pipe fitting acc. to DIN 11851 can be ordered either as a complete connection (GK) or male end SC (GO)/liner SD (KO) as a connection fitting on a vertical port. If a complete connection is ordered on a housing port, the male end is welded onto the housing. The groove flange contains the seal ring G. The liner (KO) contains the groove nut.

GK – Complete connection, male end on housing

Available nominal widths

Metric	DN	10–150
Inch OD	OD	1" – 4"

Technical data

Material	1.4404 (AISI 316L)
Standard	DIN 11851
Seal Material	EPDM (FDA), FKM (FDA), HNBR (FDA)*
Maximum pressure	DN 10–40, OD 1"–1 ½": 25 bar
	DN 50–100, OD 2"–4": 16 bar
	DN 125–150: 10 bar

* up to DN 100

GO – Male end SC, including seal ring G

Available nominal widths

Metric	DN	10–150
Inch OD	OD	1" – 4"

Technical data

Material	1.4404 (AISI 316L)
Standard	DIN 11851
Seal Material	EPDM (FDA), FKM (FDA), HNBR (FDA)*
Maximum pressure	DN 10–40, OD 1"–1 ½": 25 bar
	DN 50–100, OD 2"–4": 16 bar
	DN 125–150: 10 bar

* up to DN 100

KO – Liner SD, including groove nut

Available nominal widths

Metric	DN	10–150
Inch OD	OD	1" – 4"

Technical data

Material	1.4404 (AISI 316L)
Standard	DIN 11851
Maximum pressure	DN 10–40, OD 1"–1 ½": 25 bar
	DN 50–100, OD 2"–4": 16 bar
	DN 125–150: 10 bar

Incorporation of the option in the order code and example

Position		Description of the order code for options
12		Connection fittings
	J	Valve with connection fittings (required connection fitting, please specify separately)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	J	/52	+	0	0	0	0	0	M

Options – Connection Fittings Hygienic Flange Connection acc. to DIN 11853-2



Complete hygienic flange connection (ASK)



Hygienic-groove flange (NFK), including connecting elements and seal ring



Hygienic flange (BFK)

Typical application and description

An O-ring is used for sealing the hygienic flange connection acc. to DIN 11853-2, and is given a defined compression by a metal stop. The O-ring is also protected by the special geometry of the recess from being pulled out at high flow rates. Furthermore, the flange connection is centered by the design shape. The sealing geometry of the hygienic flange connection corresponds to the aseptic flange connection acc. to DIN 11864-2.

The hygienic flange connection (ASK) can be ordered either as a complete connection including bolts and nuts (ASK) or a hygienic groove flange (NFK)/hygienic flange (BFK) as a connection fitting on a vertical port. If a complete connection is ordered on a housing port, the groove flange is welded onto the housing. The groove flange (NFK) contains not only the O-Ring but also the required connecting elements.

ASK – Complete hygienic flange connection

Available nominal widths

Metric	DN	10–150
Inch OD	OD	1" – 4"

Technical data

Material	1.4404 (AISI 316L)
Seal material	EPDM (FDA), FKM (FDA), HNBR (FDA)*
Standard	DIN 11853-2
Maximum pressure	DN 10–40, OD 1"–1 ½": 25 bar
	DN 50–100, OD 2"–4": 16 bar
	DN 125–150: 10 bar

* up to DN 100

NFK – Hygienic groove flange, including connecting elements and seal

Available nominal widths

Metric	DN	10–150
Inch OD	OD	1" – 4"

Technical data

Material	1.4404 (AISI 316L)
Seal material	EPDM (FDA), FKM (FDA), HNBR (FDA)*
Standard	DIN 11853-2
Maximum pressure	DN 10–40, OD 1"–1 ½": 25 bar
	DN 50–100, OD 2"–4": 16 bar
	DN 125–150: 10 bar

* up to DN 100

BFK – Hygienic flange

Available nominal widths

Metric	DN	10–150
Inch OD	OD	1" – 4"

Technical data

Material	1.4404 (AISI 316L)
Standard	DIN 11853-2
Maximum pressure	DN 10–40, OD 1"–1 ½": 25 bar
	DN 50–100, OD 2"–4": 16 bar
	DN 125–150: 10 bar

Incorporation of the option in the order code and example

Position		Description of the order code for options
12		Connection fittings
	J	Valve with connection fittings (required connection fitting, please specify separately)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	J	/52	+	0	0	0	0	0	M

Options – Connection Fittings
Clamp Connection (Tri-Clamp)



Clamp
connection (CO)

Typical application and description

The clamp connection acc. to DIN 32676 is a widely used connection fitting, in the food, chemical and pharmaceutical industry, especially in North America. The connection uses a symmetrically structured clamp connection with a seal located in between it, and is secured by a clamp.

The second clamp connection, the seal and the clamp are not supplied. Clamps with nominal width OD series are compatible to ASME BPE clamps. Clamp connections are also available for valves according to the requirements of the 3A.

The second clamp connection, the seal and the cramp are not supplied.

Available nominal widths

Metric	DN	10–150
Inch OD	OD	1" – 6"

Technical data

Material	DN	1.4404 (AISI 316L)
	OD	AISI 316L
Standard	DN	DIN 32676
	OD	DIN 32676*; Length 28.5 mm**
Inner diameter	DN	DIN 11866 row A
	OD	DIN 11866 row C
Certificates		3.1
Maximum pressure		DN 10–40, OD 1"–1 ½": 25 bar
		DN 50–65, OD 2"–3": 16 bar
		DN 80–150, OD 4"–6": 10 bar

* Similar to ASME BPE B **OD 6" referred to DIN 32676

Incorporation of the option in the order code and example

Position		Description of the order code for options
13		Connection fittings
	/12	Valve with connection fittings (required connection fitting, please specify separately)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	N	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	J	/52	+	0	0	0	0	0	M

Options – Accessories
VARIVENT® Damping Cylinder



Typical application and description

To avoid water hammers when the valve disc of VARIVENT® valves is closed in the flow direction.

The oil-filled damping cylinder enables the closing speed of VARIVENT® valves to be kept constant throughout the entire stroke length. The closing speed can be set using an adjustable throttle valve on the bypass.

The application is recommended when the installed valve closes in the flow direction of the product, and cannot be converted to a valve variant intended for this flow direction.

Available nominal widths

Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

Available valve types

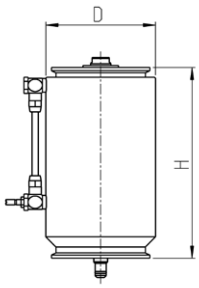
Single-seat valves with shut-off function	N, U
Single-seat valves with divert function	W, X
Mixproof valves with shut-off function	D, B, R
Piggable mixproof valves with shut-off function	L
Mixproof valves with divert function	Y
Mixproof shut-off valves for CIP and gas applications	C, K
Tank bottom valves	N, U, T*

* Not possible with lifting actuator

Technical data

Type	R7**
Material	1.4301 (AISI 304)
Filling fluid	Synthetic lubricating oil for the foodstuffs industry acc. to NSF-H1, Rivolta F.L. 50

** Possible for valve with maximum actuator size EH



Type	Dimensions		
	d [mm]	H [mm]	Weight [kg]
R7	108	188	7.9

Incorporation of the option in the order code and example

Position	Description of the order code for options	
13	Accessories	
	/12	Damping cylinder with bypass

Position	1	2	3		4/5		6	7		8		9		10	11	12	13				14 to 19					
Code	N	E		-	DN 80/80	-	S	Z	-	RG	-	L0	-	1	2	N	/12	/52	+	0	0	0	0	0	M

Options – Accessories
VARIVENT® Two-position-stop



Typical application and description

Setting the coarse and fine flow when dosing or weighing at a bottling station.

With the two-position-stop (cylinder), a pneumatically operated valve can be moved to two reproducible positions in addition to the closed position. A partial stroke and a full stroke, or two partial strokes, can be set.

The two-position stop can be used for valves with upwards switch travel, such as spring-closing valves type N or spring-opening valves type U. The valve position can be deteced by proximity switches mounted in the lantern.

Available nominal widths		
Metric	DN	25–150
Inch OD	OD	1"–6"
Inch IPS	IPS	2"–6"

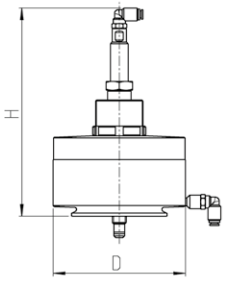
Available valve types	
Single-seat valves with shut-off function	N, U
Single-seat valves with divert function	W, X
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	K
Tank bottom valves	N, U

Only for spring-to-close valves, in type U only spring-to-open valves possible!

Technical data	
Material	1.4301 (AISI 304)
Setting of the strokes	Mechanically using threaded pieces and adjustment screw
Control and feedback system	Feedback on the valve position is possible by using proximity switches in the lantern

Type		Dimensions				
	For valves with actuator size*	d [mm]	H [mm]	Max. partial stroke [mm]	Max. stroke [mm]	Weight [kg]
AS	A...	98	216	17	30	2.7
CS	B..., C...	135	218	30	30	3.7
DS	D...	170	222	33	40	5.8
ES	E...	210	222	33	40	7.7
SS 6	E...6, S...6	260	282	55	60	13.0

* See position 8 in the code



Incorporation of the option in the order code and example

Position		Description of the order code for options	
8		Actuator (spring-to-close)	/ Two-position-stop
	🔍	.../...	Required combination of main actuator / two-position stop according to the actuator selection sheet and corresponding two-position stop cylinder (e. g. CD/CS)
13		Accessories	
	🔍	/16	Two-position-stop (cylinder)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19					
Code	N	E		-	DN 80/80	-	S	Z	-	CD/CS 🔍	-	L0	-	1	2	N	/16 🔍	/52	+	0	0	0	0	0	M

Options – Accessories
VARIVENT® Two-position-stop with T.VIS®



Available nominal widths

Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

Available valve types

Single-seat valves with shut-off function	N, U
Single-seat valves with divert function	W, X
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	K
Tank bottom valves	N, U

Only for spring-to-close valves, in type U only spring-to-open valves possible!

Technical data

Material	1.4301 (AISI 304)
Setting of the strokes	Mechanically using threaded pieces and adjustment screw
Control and feedback system	The description of the order code for valves with control and feedback system is contained in the catalog GEA Valve Automation

Typical application and description

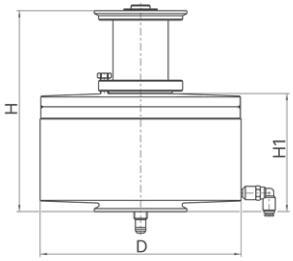
Setting the coarse and fine flow when dosing or weighing at a bottling station.

With the two-position-stop (cylinder), a pneumatically operated valve can be moved to two reproducible positions in addition to the closed position. A partial stroke and a full stroke, or two partial strokes, can be set. The VARIVENT® Two-position-stop with T.VIS® can be used for valves with the non-actuated position open as well as closed.

This type was developed for valves that are also equipped with a T.VIS® A15 or T.VIS® E20 feedback system.

Type		Dimensions					
	For valves with actuator size*	d [mm]	H1 [mm]	H [mm]	Max. partial stroke [mm]	Max. stroke [mm]	Weight [kg]
AS	A...	99	65	154.5	17	30	4.14
BS	B...	110	82	171.5	30	30	4.58
CS	C...	135	82	171.5	30	30	5.58
DS	D...	170	96	185.5	33	40	8.36
ES	E...	210	96	185.5	33	45	11.11
ES6-NC, ES6-NO	E...6	212	123	212.5	55	60	13.29
SS6-NC, SS6-NO	S...6	262	123	212.5	55	60	18.39

* See position 8 in the code



Incorporation of the option in the order code and example

Position		Description of the order code for options	
8		Actuator	/Two-position-stop
	🔍	.../...	Required combination of main actuator / two-position stop according to the actuator selection sheet and corresponding two-position stop cylinder (e. g. CD/CS)
13		Accessories	
	🔍	/16	Two-position-stop with T.VIS®

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19					
Code	N	E		-	DN 50/50	-	S	Z	-	BB/BS 🔍	-	L0	-	1	2	N	/16 🔍	/52	+	0	0	0	0	0	M

Options – Accessories
VARIVENT® Limit Stop



Typical application and description
Mechanically adjustable limit on the stroke.

The maximum stroke can be reduced by using a mechanically adjustable limit stop. The limit stop limits either the opening or the closing stroke of the valve. The minimum stroke is 5 mm.

It is not possible to install a proximity switch as a feedback function in the lantern!

NOTE: The limit stop can not be used simultaneously with a sterile lock.

Available nominal widths

Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

Available valve types

Single-seat valves with shut-off function	N, U
Single-seat valves with divert function	W, X
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	C, K*
Tank bottom valves	N, U

Technical data

Material	1.4301 (AISI 304)
Setting possibility	Limitation of the stroke in closing or opening direction; only possible for single-seat valves

			Type	Dimensions	Type	Dimensions
Valve type			N, U, W, X, C		K*	
Nominal width				Weight [kg]		Weight [kg]
DN 25	OD 1"		N 25 – 50	0.4	–	–
DN 40	OD 1 ½"		N 25 – 50	0.4	K 40 – 100	0.5
DN 50	OD 2"	IPS 2"	N 25 – 50	0.4	K 40 – 100	0.5
DN 65	OD 2 ½"		N 65 – 100	0.7	K 40 – 100	0.5
DN 80	OD 3"	IPS 3"	N 65 – 100	0.7	K 40 – 100	0.5
DN 100	OD 4"	IPS 4"	N 65 – 100	0.7	K 40 – 100	0.5
DN 125			N 125 – 6"IPS	1.1	–	–
DN 150	OD 6"	IPS 6"	N 125 – 6"IPS	1.1	–	–

* Only for stroke limitation when opening the valve

Incorporation of the option in the order code and example

Position		Description of the order code for options	
13		Accessories	
	🔍	/20	Limit stop, opening
		/21	Limit stop, closing

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19					
Code	N	E		-	DN 80/80	-	S	Z	-	RG	-	L0	-	1	2	N	/20 🔍	/52	+	0	0	0	0	0	M

Options – Accessories
VARIVENT® Sterile Lock for Single-seat Valves



Typical application and description

For reliable separation between the surface of the valve disc in contact with the product and the atmosphere.

Applying sterilizing media to the sterile lock prevents contamination of the product from atmosphere due to the switching movement of the valve stem (“elevator effect”).

In the case of media that tend to crystallise, the formation of crystals on the shaft can be prevented by applying a liquid to the flush lock, thereby protecting the seal against damage.

NOTE: The limit stop can not be used simultaneously with a sterile lock.

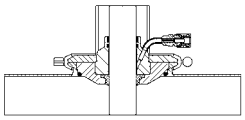
Available nominal widths		
Metric	DN	25–150
Inch OD	OD	1"–6"
Inch IPS	IPS	2"–6"

Available valve types	
Single-seat valves with shut-off function	N, U
Single-seat valves with divert function	W, X
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	C
Tank bottom valves	N, U

Technical data	
Material	1.4301 (AISI 304)
Barrier media	e.g. sterile water*, condensate*, steam
IMPORTANT: The sterile lock is not suitable for permanent vapor application. Brief actuation is recommended after or before the switching procedure.	

* Maximum pressure at flushing lock: 1 bar_g

			Dimensions	
Nominal width			Connection [mm]	Weight [kg]
DN 25	OD 1"		6 / 4	0.4
DN 40	OD 1 ½"		6 / 4	0.8
DN 50	OD 2"	IPS 2"	6 / 4	0.8
DN 65	OD 2 ½"		6 / 4	1.5
DN 80	OD 3"	IPS 3"	6 / 4	1.5
DN 100	OD 4"	IPS 4"	6 / 4	2.6
DN 125			6 / 4	5.9
DN 150	OD 6"	IPS 6"	6 / 4	7.2



Incorporation of the option in the order code and example

Position	Description of the order code for options	
13	Accessories	
	/24	Flushing lock complete

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19					
Code	N	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	N	/24	/52	+	0	0	0	0	0	M

Options – Accessories
VARIVENT® Sterile Lock for Double-seat Valves, Complete



Typical application and description

For reliable separation between the surface of the valve disc in contact with the product and the atmosphere.

Applying sterilizing media to the sterile lock prevents contamination of the product from atmosphere due to the switching movement of the valve stem (“elevator effect”).

In the case of media that tend to crystallise, the formation of crystals on the shaft can be prevented by applying a liquid to the flush lock, thereby protecting the seal against damage. If this option is selected with double-seat valves, both the upper and the lower stem feedthrough will be equipped with a sterile lock.

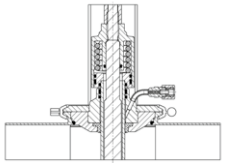
Available nominal widths		
Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

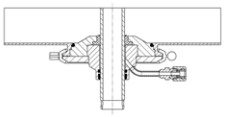
Available valve types	
Single-seat valves with shut-off function	–
Single-seat valves with divert function	–
Mixproof valves with shut-off function	D, B, R
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	Y
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	–

Technical data	
Material	1.4301 (AISI 304)
Barrier media	e.g. sterile water*, condensate*, steam

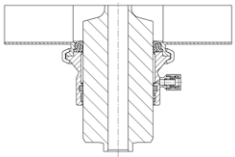
IMPORTANT: The sterile lock is not suitable for permanent vapor application. Brief actuation is recommended after or before the switching procedure.

* Maximum pressure at flushing lock: 1 bar_g





for VARIVENT® type D, Y



for VARIVENT® type B, R

Dimensions

Valve type			D, Y		B		R	
Connection upper sterile lock			6/4 mm		6/4 mm		6/4 mm	
Nominal width Lower sterile lock			Connection [mm]	Weight** [kg]	Connection [mm]	Weight** [kg]	Connection [mm]	Weight [kg]
DN 25	OD 1"		6/4	0.8	–	–	6/4	0.8
DN 40	OD 1 ½"		6/4	1.6	–	–	8/6	1.4
DN 50	OD 2"	IPS 2"	6/4	1.6	8/6***	1.4	8/6	1.4
DN 65	OD 2 ½"		6/4	3.0	8/6	2.7	8/6	2.7
DN 80	OD 3"	IPS 3"	6/4	3.0	8/6	2.7	8/6	2.7
DN 100	OD 4"	IPS 4"	6/4	5.2	8/6	4.3	8/6	4.3
DN 125			6/4	11.8	8/6	8.4	8/6	8.4
DN 150	OD 6"	IPS 6"	6/4	14.2	8/6	10.4	8/6	10.4

** Complete, upper and lower sterile lock *** Only for IPS 2"

Incorporation of the option in the order code and example

Position		Description of the order code for options
13		Accessories
	/24	Flushing lock complete (top and bottom)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19					
Code	N	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	N	/24	/52	+	0	0	0	0	0	M

Options – Accessories
VARIVENT® Sterile Lock for Double-seat Valves (Balancer only)



Typical application and description

For reliable separation between the surface of the lower valve disc in contact with the product and the atmosphere.

Applying sterilizing media to the sterile lock prevents contamination of the product from atmosphere due to the switching movement of the valve stem (“elevator effect”).

In the case of media that tend to crystallise, the formation of crystals on the shaft can be prevented by applying a liquid to the flush lock, thereby protecting the seal against damage.

Available nominal widths

Metric	DN	40 – 150
Inch OD	OD	1 ½" – 6"
Inch IPS	IPS	2" – 6"

Available valve types

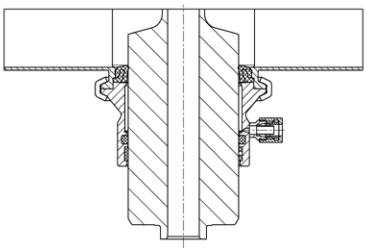
Single-seat valves with shut-off function	–
Single-seat valves with divert function	–
Mixproof valves with shut-off function	B, R
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	–

Technical data

Material	1.4301 (AISI 304)
Barrier media	e.g. sterile water*, condensate*, steam

IMPORTANT: The sterile lock is not suitable for permanent vapor application. Brief actuation is recommended after or before the switching procedure.

* Maximum pressure at flushing lock: 1 bar_g



Dimensions

Valve type			B		R	
Nominal width			Connection [mm]	Weight** [kg]	Connection [mm]	Weight [kg]
DN 40	OD 1 ½"		–	–	8 / 6	0.6
DN 50	OD 2"	IPS 2"	8 / 6**	0.6	8 / 6	0.6
DN 65	OD 2 ½"		8 / 6	1.2	8 / 6	1.0
DN 80	OD 3"	IPS 3"	8 / 6	1.2	8 / 6	1.0
DN 100	OD 4"	IPS 4"	8 / 6	1.7	8 / 6	1.4
DN 125			8 / 6	2.5	8 / 6	2.3
DN 150	OD 6"	IPS 6"	8 / 6	3.2	8 / 6	2.7

** Only for IPS 2"

Incorporation of the option in the order code and example

Position		Description of the order code for options	
13		Accessories	
	🔍	/23	Balancer flushing lock (bottom)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19					
Code	R	E		-	DN 80/80	-	S	Z	-	DD5	-	L0	-	1	2	N	/23 🔍	/52	+	0	0	0	0	0	M

Options – Accessories
VARIVENT® Steam Lock PMO



Available nominal widths		
Inch OD	OD	1 ½" – 6"

Available valve types	
Single-seat valves with shut-off function	–
Single-seat valves with divert function	–
Mixproof valves with shut-off function	M
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	–

Typical application and description

For reliable separation between the balancer surface of the lower valve disc in contact with the product and the atmosphere.

Applying steam or sterilizing media to the steam lock prevents contamination of the product from atmosphere due to the switching movement of the valve stem (“elevator effect”).

In the case of media that tend to crystallise, the formation of crystals on the shaft can be prevented by applying a liquid to the steam lock, thereby protecting the seal against damage.

Incorporation of the option in the order code and example

Position	Description of the order code for options	
13	Accessories	
	/24	Steam lock PMO

Position	1	2	3		4/5		6	7		8		9		10	11	12	13					14 to 19					
Code	M	E	O	-	OD3"/ OD3"	-	S	Z	-	CF5/ CLMN56	-	V1	-	1	5	/S	/24	/52	/3A	/2.0	+	0	0	0	0	0	M

Options – Accessories
VARIVENT® Balancer Cleaning Device



Available nominal widths

Metric	DN	40–150
Inch OD	OD	1 ½" – 6"

Available valve types

Single-seat valves with shut-off function	–
Single-seat valves with divert function	–
Mixproof valves with shut-off function	R, MX, M
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	–

Typical application and description

The balancer cleaning device offers the advantage of automatic external cleaning of the lower balancer, which is performed by lifting the lower valve disc. This option ensures maximum efficiency during valve cleaning, as not only the lower valve seat and the chavity chamber are cleaned during lifting, but also the outer surface of the balancer at the same time. This prevents possible contamination of the product from the atmosphere due to the switching movement of the valve stem ("elevator effect").



Incorporation of the option in the order code and example

Position		Description of the order code for options
13		Accessories
	/B	Balancer cleaning device

Position	1	2	3		4/5		6	7		8		9		10	11	12	13					14 to 19					
Code	M	E	O	-	OD3"/ OD3"	-	S	Z	-	CF5/ CLMN56	-	V1	-	1	5	/S	/52	/3A	/B	/2.0	+	0	0	0	0	0	M

Options – Accessories
VARIVENT® Leakage Connector



Available nominal widths

Metric	DN	40 – 150
Inch OD	OD	1 ½" – 6"
Inch IPS	IPS	2" – 6"

Available valve types

Single-seat valves with shut-off function	–
Single-seat valves with divert function	–
Mixproof valves with shut-off function	D
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	Y
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	–

Technical data

Material	1.4301 (AISI 304)
Surface in contact with the product	R_a ≤ 0.8 µm
Outside surface	Matt blasted

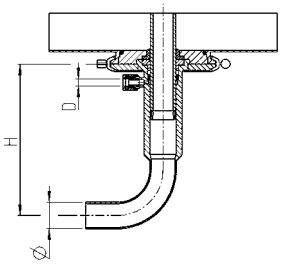
Typical application and description

For controlled collection of the leakage in double-seat valves without dripping pan or funnel, e.g. valves installed outside of manifolds.

The leakage connector is used for individual collection of switching leakages and cleaning media during cleaning of the leakage chamber.

The leakage outlet should be flushed regularly through the cleaning connection!

			Dimensions			
Nominal width			Ø [mm]	d [mm]	H [mm]	Weight [kg]
DN 25	OD 1"		29	6 / 4	122	0.4
DN 40	OD 1 ½"		29	8 / 6	147	0.8
DN 50	OD 2"	IPS 2"	29	8 / 6	147	0.8
DN 65	OD 2 ½"		29	8 / 6	166	1.2
DN 80	OD 3"	IPS 3"	29	8 / 6	166	1.2
DN 100	OD 4"	IPS 4"	29	8 / 6	166	1.2
DN 125			30	10 / 8	105	1.8
DN 150	OD 6"	IPS 6"	30	10 / 8	105	1.8



Incorporation of the option in the order code and example

Position	Description of the order code for options	
13	Accessories	
	/26	Leakage connector

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19					
Code	D	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	N	/26	/52	+	0	0	0	0	0	M

Options – Accessories
VARIVENT® Leakage Connector for Balancer



Available nominal widths		
Metric	DN	40 – 100
Inch OD	OD	1 ½" – 4"
Inch IPS	IPS	2" – 4"

Available valve types	
Single-seat valves with shut-off function	–
Single-seat valves with divert function	–
Mixproof valves with shut-off function	B, R
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	–
Tank bottom valves	–

Technical data	
Material	1.4301 (AISI 304)
Surface in contact with the product	$R_a \leq 0.8$ µm
Outside surface	Matt blasted

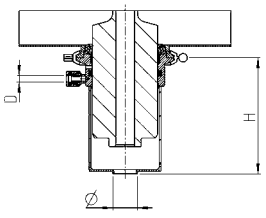
Typical application and description

For controlled collection of the leakage in double-seat valves without dripping pan or funnel, e.g. valves installed outside of manifolds.

The leakage connector is used for individual collection of switching leakages and cleaning media during cleaning of the leakage chamber.

The leakage outlet should be flushed regularly through the cleaning connection!

			Dimensions			
Nominal width			Ø [mm]	d [mm]	H [mm]	Weight [kg]
DN 40	OD 1 ½"		26	8 / 6	147.5	0.9
DN 50	OD 2"	IPS 2"	26	8 / 6	147.5	0.9
DN 65	OD 2 ½"		26	8 / 6	136.5	1.3
DN 80	OD 3"	IPS 3"	26	8 / 6	136.5	1.3
DN 100	OD 4"	IPS 4"	26	8 / 6	143.5	1.9



Incorporation of the option in the order code and example

Position		Description of the order code for options	
13		Accessories	
	/26		Leakage connector

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19					
Code	R	E		-	DN 80/80	-	S	Z	-	DD5	-	L0	-	1	2	N	/26	/52	+	0	0	0	0	0	M

Options – Accessories
VARIVENT® Flush Valve

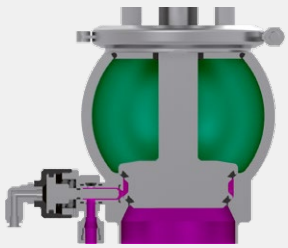


Typical application and description
Leakage detection in case of seal defects on the double-seal valve type C.

If there is no need to flush the leakage chamber in a double-seal valve type C, the valve can be equipped with only one flush valve. In this case, the flush valve is not used for flushing, but only for leakage detection in case of defects.

To modificate the double seal valve from two fluching valves to just one the plug SPV-C PVDF with part number 221-464.07 is required.

To drain leakages into the leakage pan a pipe 8 × 1 mm or a hose 8/6 mm can be connected to the flushing valve.



Detection of leakage
in case of seal defects
with only one flush valve

Double seal valves whose leakage chamber is to be flushed with cleaning media above a temperature of 80 °C are equipped with a metal cylinder and a piston made of PEEK.

Available nominal widths

Metric	DN	25 – 150
Inch OD	OD	1" – 4"

Available valve types	
Single-seat valves with shut-off function	–
Single-seat valves with divert function	–
Mixproof valves with shut-off function	–
Piggable mixproof valves with shut-off function	–
Mixproof valves with divert function	–
Mixproof shut-off valves for CIP and gas applications	C
Tank bottom valves	–

Technical data	
Material	1.4301 (AISI 304) / PVDF
Leakage connection	8 / 6 mm
Pressure leakage channelling	Pressureless

Incorporation of the option in the order code and example

Position		Description of the order code for options	
13		Accessories	
	🔍	/27	Version with only one flush valve
		/C-S	Stainless steel flush valve off 80 °C

Position	1	2	3		4/5		6	7		8		9		10	11	12	13				14 to 19					
Code	C	T		-	DN 80/80	-	S	Z	-	CD	-	V0	-	1	2	N	/27 🔍	/52	/C	+	0	0	0	0	0	M

Options – Additional Options VARIVENT® CIP Connection for Double-seat and Double-seal Valve





Typical application and description

Double-seat valves are equipped with a cleaning connection at the level of the lantern to supply the spray cleaning with cleaning media. In case of double-seal valves the seat area is cleaned by inserting CIP media into one of the two flushing valves. Both connections are supplied with cleaning media through a connection to a supply valve in the periphery. All necessary components as well as one meter PTFE-hose can be supplied with the valve directly or ordered as an assembly. For the cleaning of the seat area at double-seal valves one of the two flushing valves also has to be connected to CIP-Medium.

As an option for double-seat valves, it is also possible to make the spray cleaning connection a blind connection. Making the cleaning connection blind is only intended for transport purposes, to prevent dust or particles from penetrating the cleaning connection. During operation of the valve, it is not recommended for the cleaning connection to use such a blind.

Available nominal widths

Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

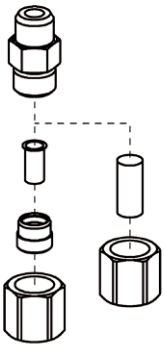
Available valve types

Single-seat valves with shut-off function	–
Single-seat valves with divert function	–
Mixproof valves with shut-off function	D, B, R
Piggable mixproof valves with shut-off function	L
Mixproof valves with divert function	Y
Mixproof shut-off valves for CIP and gas applications	C*
Tank bottom valves	T

* For the connection of the flushing valve of a double-seal valve type C, the part number 221-105.79, thus the hose dimension 8/6, is required.



Example installation



		Nominal width					
		DN 25, OD 1"		DN 40–100, OD 1 ½"–4", IPS 2"–4"		DN 125–150, OD 6", IPS 6"	
	One meter CIP hose with connection parts for double-seat valves; parts contained	Ø size	Article number	Ø size	Article number	Ø size	Article number
Double-seat Valves	PTFE hose, 1 m	6 / 4	221-105.78	8 / 6	221-105.79	10 / 8	221-105.80
	Support tube	6		8		10	
	Olive	6		8		10	
	Union nut	12		14		16	
	Weld-on vertical port	6		8		10	
Double-seal Valves	PTFE hose, 1 m	8 / 6	221-105.79*	8 / 6	221-105.79*	8 / 6	221-105.79*
	Support tube	8		8		8	
	Olive	8		8		8	
	Union nut	14		14		14	
	Weld-on vertical port	8		8		8	

	CIP connection blind	Ø size	Article number	Ø size	Article number	Ø size	Article number
		6	915-089	8	915-068	10	915-090

* For the connection of the flushing valve of a double-seal valve type C, the part number 221-105.79, thus the hose dimension 8/6, is required.

Incorporation of the option in the order code and example

Position		Description of the order code for options	
13		Accessories	
	🔍	/32	1 m CIP hose with connection parts for double-seat valves
		/36	CIP connection blind for double-seat valves

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19					
Code	D	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	N	/32 🔍	/52	+	0	0	0	0	0	M

Options – Additional Options
Test Report and Inspection Certificate

Typical application and description

Optionally, the housings or all parts in contact with the product can be supplied with a test report 2.2 and/or an inspection certificate 3.1 acc. to EN 10204.

IMPORTANT: An inspection certificate for all components in contact with the product can only be produced if notification of this requirement is provided with the order. The inspection certificate 3.1 acc. to EN 10204 can only be issued subsequently for the housings. Unless special requirements are stated, the order code referred to below only covers issuing the inspection certificate 3.1 acc. to EN 10204 for the housings.

European standard EN 10204 in its 2004 edition defines the various types of test certificates that can be issued to the ordering party in accordance with the agreements in the order for delivery of metallic products.

Number	Type of test certificate	Content of the certificate	Confirmation of the certificate by
2.2	Test report	Confirmation of compliance with the order, specifying results of a non-specific test	The manufacturer
3.1	Inspection certificate 3.1*	Confirmation of compliance with the order, specifying results of a specific test	The manufacturer's acceptance officer independent of the production department

* Inspection certificates 3.1 can be selected either for the housing or for product wetted parts, incl. connection fittings or ADW2 (please specify when ordering).

Incorporation of the option in the order code and example

Position	Description of the order code for options	
13	Accessories	
	/41	Test report 2.2
	/42	Inspection certificate 3.1 according to EN 10204

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19					
Code	D	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	N	/41	/52	+	0	0	0	0	0	M

Options – Additional Options
3-A Symbol





Typical application and description

3-A Sanitary Standards, Inc. is an independent, non-profit corporation dedicated to advancing hygienic equipment design for the food, beverage, and pharmaceutical industries. In particular, it represents the interests of three stakeholder groups in the US dairy industry with a common commitment to promoting food safety and the public health – regulatory sanitarians, equipment fabricators and processors. To achieve this purpose, it has produced guidelines which define various design requirements on components. In the area of seat valves, it is above all the standards 53-07 (compression type valves) and 85-03 (double-seat mixproof valves) that are relevant. Compliance with these design specifications is examined by an independent expert and confirmed by issuing a certificate. Almost the entire VARIVENT® and ECOVENT® valve series complies with these design specification in the standard design.

If the 3-A option is selected, compliance of the valve with the requirements of the standard is confirmed by means of a sticker on the component. Consequently, if this option is selected, it is necessary to comply with the standard in terms of identification as well.

Furthermore, when this option is selected, the welds of the port connections are ground smooth. The standard does not specify that this is mandatory, but it is in line with customer's preferences in this market. Valves that are intended to meet the 3A requirements are available with butt weld ends or with clamp connections.

IMPORTANT: The standard surface when this option is selected is "inside surface $R_a \leq 0.8$ µm, outside matt". Many customers in this market ask for the alternative surface quality "inside surface $R_a \leq 0.8$ µm, outside ground". If this is required, it must be selected separately at position 11 in the order code as a non-standard surface.

Incorporation of the option in the order code and example

Position	Description of the order code for options	
13	Accessories	
	/3A	Adhesive ID tag, configuration of the valve according to 3-A standard

Position	1	2	3		4/5		6	7		8		9		10	11	12	13				14 to 19					
Code	D	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	N	/S	/52	/3A	+	0	0	0	0	0	M

Options – Additional Options
ATEX



Typical application and description

The ATEX standard of the European Union actually includes two guidelines on the explosion protection subject, the ATEX Product Directive 2014/34/EU and 1999/92/EG. The abbreviation ATEX come from the French term ATmosphères EXplosibles.

VARIVENT® and ECOVENT® valves have been subjected to an ignition hazard assessment and do not have in the interior a potential source of ignition. Thus the directive 2014/34/EU (ATEX) is not applicable for the internal space of the valve.

A risk of ignition or explosion very rarely may occur from the actuator unit in case of an error so that the actuator comes within the scope of Directive 2014/34/EU and is labeled accordingly. The suitability is confirmed by the type-specific Declaration of Conformity of the manufacturer.

Incorporation of the option in the order code and example

Position		Description of the order code for options	
13		Accessories	
	🔍	/EX	Ex-proof design

Position	1	2	3		4/5		6	7		8		9		10	11	12	13			14 to 19					
Code	D	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	N		/52	/EX 🔍	+	0	0	0	0	0	M

Options – Additional Options
ID Plates, TAG Numbers



Typical application and description

As a standard, the valves are provided with a nameplate for clear identification. All key information required for clear allocation of the valve, as well as technical data, is specified on the nameplate. The plate is glued onto the actuator.

Key data contained	
Valve type	
Serial number	
Materials in contact with the product	Metallic material / seal material
Air supply pressure	Min./Max. [bar/psi]
Product pressure	Housing 1/2/3 [bar/psi]



Option /50 – engraved labeling plate for system identification number

In addition to the nameplate, the option /50 consists of an engraved labeling plate for the TAG number attached between the actuator and lantern using a key ring on the clamp connection.



Option /51 – metal labeling plate

The engraved labeling plate is attached between the actuator and lantern using a key ring on the clamp connection. Additional information can be recorded as well as the TAG number, customer designation and the valve type. In addition, the valve is identified with a nameplate.

Option /52 - System identification number

In addition to the nameplate sticker the valve can be labelled with a desired system identification number. The TAG number is assigned to the valve by means of a separate sticker on the actuator or control and feedback system.

Incorporation of the option in the order code and example

Position		Description of the order code for options	
13		Accessories	
	🔍	/50	Engraved metal plate (TAG-No.)
		/51	Metal plate
		/52	Adhesive ID tag

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	D	E		-	DN 80/80	-	S	Z	-	CD	-	L0	-	1	2	N	/50 🔍	+	0	0	0	0	0	M

Options – Additional Options
Transport Device



Typical application and description
For transporting VARIVENT® and ECOVENT® valves with pneumatic actuator for assembly and maintenance purposes.

The transport device is screwed into the piston stem of the actuator after removal of the control and feedback system and thus permits secure transport with available lifting equipment. The transport device must be removed before commissioning.

Available nominal widths

Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

Available valve types

Single-seat valves with shut-off function	N, U
Single-seat valves with divert function	W, X
Mixproof valves with shut-off function	D, B, R, MX, M
Piggable mixproof valves with shut-off function	L
Mixproof valves with divert function	Y
Mixproof shut-off valves for CIP and gas applications	C, K
Tank bottom valves	N, U, T

Technical data

Material	1.4301 (AISI 304)
Connection size	M14
Article number	221-104.98

Options – Additional Options
Manual Emergency Actuator



Typical application and description

For manual operation of pneumatically operated VARIVENT® and ECOVENT® valves during a power failure and for releasing the spring tension of the actuator during maintenance and installation work.

The manual emergency actuator is used for manual operation of pneumatically operated VARIVENT® and ECOVENT® valves during a system failure. Radially sealing double-seat valves with lift actuators are an exception. With an manual emergency actuator the valve disc can be lifted mechanically during maintenance and installation work on all VARIVENT® and ECOVENT® valve types in order to release the spring tension of the actuator. An manual emergency actuator is not required for service work on radially sealing VARIVENT® single-seat valves of types U_R, W_R and X_R as well as FDD.

Available nominal widths

Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

Available valve types

Single-seat valves with shut-off function	N, N/ECO, U
Single-seat valves with divert function	W, W/ECO, X
Mixproof valves with shut-off function	D, B, R
Piggable mixproof valves with shut-off function	L
Mixproof valves with divert function	Y
Mixproof shut-off valves for CIP and gas applications	C, K
Tank bottom valves	N, N/ECO, U, T

Technical data

Material		1.4301 (AISI 304)
Article number	VARIVENT® Valves	221-310.74
	ECOVENT® Valves	221-310.75

Options – Additional Options
LoTo DISK LOCK



LoTo DISK LOCK

The Lock Out, Tag Out (LoTo) device is used to ensure a safe maintenance and commissioning of process plants. Energy sources will be locked and visually marked to prevent the unintentional movement of the valve.

The DISK LOCK for seat valves can be installed on all nominal sizes of GEA VARIVENT® single-seat and mixproof valves. This advanced solution with its increased safety blocks the activation of the actuator, so that the valve disk can no longer be moved. If the valve is used with any Control and Feedback Systems it needs to be taken off for locking the valve disk.

Locking the movement of the actuator
Valve disk is fixed
Advanced solution – increased safety
In the event of a water hammer, the valve remains closed
Slight deformation of stainless steel or gasket possible
In order to achieve 100 % water hammer safety, block & bleed needs to be applied additionally

Available nominal widths		
Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

Technical data	
Material	1.4301 (AISI 304)

Available valve types	
Single-seat valves with shut-off function	N, U
Single-seat valves with divert function	W, X
Mixproof valves with shut-off function	D*, B*, R*, M*, MX*
Piggable mixproof valves with shut-off function	L*
Mixproof shut-off valves for CIP and gas applications	C, K
Mixproof valves with divert function	Y*, FDD
Tank bottom valves	N, U, T*

* LoTo can be applied for mixproof valves. When doing so the main stroke of the valve will be locked (with AIR or DISK LOCK). The single valve disks could still be activated (when using a lifting actuator). Hence, the engineering company or the plant operator needs to evaluate if further locks are needed.

Position description of the order code and example

Position	Description of the order code	
1	Basic type	
	HV_LoTo	For hygienic valves
2	LoTo type	
	DL	DISK LOCK
3	Valve family	
	VAR	VARIVENT® valves

The code is composed as following, depending on the chosen configuration:

Position	1		2		3
Code	HV_LoTo	-	DL	-	VAR

Options – Additional Options
LoTo AIR LOCK



AIR LOCK

The Lock Out, Tag Out (LoTo) device is used to ensure a safe maintenance and commissioning of process plants. Energy sources will be locked and visually marked to prevent the unintentional movement of the valve.

The AIR LOCK is independend of the nominal size. With this solution, either the air connection on the actuator or controltop is locked. Hence, pneumatic actuation is no longer possible.

This solution is not designed to withstand water hammers.

Locking the air connection to the control top or actuator
Prevents the movement of the actuator
Simple solution (not protected against water hammers)
Does not stay at the valve permanently
only needed when locking the valve

Air connections
Straight & angled (same solution)
Metric & imperial (one solution each)
No pressed in air connection
No Quick-release fastener
Can also be used with a throttle

Available nominal widths		
Metric	DN	25–150
Inch OD	OD	1" – 6"
Inch IPS	IPS	2" – 6"

Technical data	
Material	1.4301 (AISI 304)

Available valve types	
Single-seat valves with shut-off function	N, U
Single-seat valves with divert function	W, X
Mixproof valves with shut-off function	D*, B*, R*, M*, MX*
Piggable mixproof valves with shut-off function	L*
Mixproof shut-off valves for CIP and gas applications	C, K
Mixproof valves with divert function	Y*, FDD
Tank bottom valves	N, U, T*

* LoTo can be applied for mixproof valves. When doing so the main stroke of the valve will be locked (with AIR or DISK LOCK). The single valve disks could still be activated (when using a lifting actuator). Hence, the engineering company or the plant operator needs to evaluate if further locks are needed.

Position description of the order code and example

Position		Description of the order code	
1		Basic type	
		HV_LoTo	For hygienic valves
2		LoTo type	
		AL	AIR LOCK
3		Air connection	
		M	Metric for air hose Ø 6/4 mm
		Z	Inch for air hose Ø OD ¼" (6.35 / 4.35 mm)

The code is composed as following, depending on the chosen configuration:

Position	1		2		3
Code	HV_LoTo	-	AL	-	M

Options – Actuator Selection – Sample Selection Method VARIVENT® Actuator Air/Spring

Procedure for VARIVENT® shut-off valves type N (1)

1. Depending on the valve type, select the required table on one of the following pages.
2. The available air supply pressure indicates which rows to refer to for the actuator size.
3. Select the prevailing product pressure in order to define the required row.
4. Select a double column based on the nominal width of the valve.
5. The fail-safe position of the valve defines the precise column.
6. Select the necessary actuator size at the intersection between the row and the column.

				Nominal widths											
				DN 25 OD 1"		**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**		**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**		**DN 100 OD 4" IPS 4"** (4)		**DN 125**		**DN 150 OD 6" IPS 6"**	
Air supply pressure [min.]		Product pressure [max.]		Spring-to-close actuators (NC) and spring-to-open actuators (NO)											
bar	PSI	bar	PSI	NC	NO	NC	NO	NC	NO	NC	NO (5)	NC	NO	NC	NO
8	116	4	58	AA	AA	BB	BA	CD	BB	DF	**DD**	EG6Z	EF6A	EH6Z	EF6A
		5	72	AA	AA	BB	BA	CD	CB	DF	**DD**	EH6Z	EF6A	SK6Z	EG6A
		6	87	AA	AA	BB	BA	DF	CD	EG	**DF**	EH6Z	EF6A	SK6Z	SG6A
		7	101	AA	AA	CD	BB	DF	DD	EG	**EF**	SK6Z	EG6A	SM6Z	SH6A
		8	116	AA	AA	CD	BB	DF	DD	EG	**EF**	SK6Z	SG6A	UN6Z	SH6A
		9	130	BB	AA	CD	CB	DF	DD	EH	**EG**	SM6Z	SH6A	UN6Z	TK6A
		10	145	BB	AA	CD	CB	EG	DF	EH	**RG**	SM6Z	SH6A	–	TK6A
7	101	4	58	AA	AA	BB	BA	CD	CB	DF	**DD**	EG6Z	EF6A	EH6Z	EF6A
		5	72	AA	AA	BB	BA	CD	CB	DF	**DD**	EH6Z	EF6A	SK6Z	SG6A
		6	87	AA	AA	BB	BA	DF	DD	EG	**EF**	SH6Z	EF6A	SK6Z	SG6A
		7	101	AA	AA	CD	CB	DF	DD	EG	**EF**	SK6Z	SG6A	SM6Z	SH6A
		8	116	AA	AA	CD	CB	DF	DD	EG	**EF**	SK6Z	SG6A	UN6Z	TH6A
		9	130	BB	BA	CD	CB	DF	DD	RH	**RG**	SM6Z	SH6A	UN6Z	TK6A
		10	145	BB	BA	CD	CB	EG	EF	RH	**RG**	UM6Z	TH6A	–	UK6A
6	87	4	58	AA	AA	BB	BA	CD	CB	DF	**DD**	EG6Z	EF6A	SH6Z	EF6A
		5	72	AA	AA	BB	BA	CD	CB	DF	**DD**	SH6Z	EF6A	SK6Z	SG6A
		6	87	AA	BA	BB	BA	DF	DD	EG	**EF**	SH6Z	SG6A	SK6Z	SG6A
		7	101	AA	BA	CD	CB	DF	DD	EG	**EF**	SK6Z	SG6A	UM6Z	TH6A
		8	116	AA	BA	CD	CB	DF	DD	RG	**EF**	SK6Z	SG6A	UN6Z	TH6A
		9	130	BB	BA	CD	CB	DF	DD	RH	**SG**	UM6Z	TH6A	UN6Z	UK6A
		10	145	BB	BA	CD	CB	EG	EF	RH	**SG**	UM6Z	TH6A	–	UK6A
5	72	4	58	AA	BA	BB	BA	CD	CB	EF	**DD**	EG6Z	TF6A	SH6Z	TF6A
		5	72	AA	BA	BB	BA	DD	DB	EF	**ED**	SH6Z	TF6A	TK6Z	SG6A
		6	87	AA	BA	CB	CA	EF	DD	RG	**RF**	SH6Z	SG6A	TK6Z	TG6A
		7	101	BA	BA	CD	CB	EF	DD	RG	**RF**	TK6Z	SG6A	UM6Z	UH6A
		8	116	BA	BA	CD	CB	EF	ED	RG	**RF**	TK6Z	TG6A	–	UH6A
		9	130	BB	BA	DD	DB	EF	ED	SH	**SG**	UM6Z	UH6A	–	–
		10	145	BB	BA	DD	DB	RG	EF	SH	**TG**	UM6Z	UH6A	–	–
4 (2)	**58**	4	58	BA	BA	CB	CA	DD	DB	EF	**ED**	SG6Z	TF6A	TH6Z	TF6A
		5 (3)	**72**	**BA**	**BA**	**CB**	**CA**	**DD**	**DB**	**EF**	ED (6)	**TH6Z**	**TF6A**	**UK6Z**	**TG6A**
		6	87	BA	BA	CB	CA	EF	ED	SG	**RF**	TH6Z	TF6A	UK6Z	UG6A
		7	101	BA	CA	DD	DB	EF	ED	SG	**SF**	UK6Z	TG6A	–	–
		8	116	BA	CA	DD	DB	EF	ED	SG	**SF**	UK6Z	UG6A	–	–
		9	130	CB	CA	DD	DB	EF	ED	TH	**TG**	–	–	–	–
		10	145	CB	CA	DD	DB	SG	RF	TH	**–**	–	–	–	–

Example:

1	Valve type	**VARIVENT® shut-off valve type N**
2	Air supply pressure	**4 bar**
3	Product pressure	**5 bar**
4	Nominal width	**OD 4"**
5	Fail-safe position of the valve	**Spring-to-open (NO)**

→ **6** Result Actuator ED

Options – Actuator Selection – Sample Selection Method VARIVENT® Actuator Air/Spring

Procedure for VARIVENT® double-seat valves with lift function type D_L and D_C (1)

1. Depending on the valve type, select the required table on one of the following pages.
2. The available air supply pressure indicates which rows to refer to for the actuator size.
3. Select the prevailing product pressure in order to define the required row.
4. Select a double column based on the nominal width of the valve.
5. Select the necessary actuator size at the intersection between the row and the column.

				Nominal widths											
				DN 25 OD 1"		**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**		**DN 65 / DN 80 (4) OD 2 ½" / OD 3" IPS 3"**		**DN 100 OD 4" IPS 4"**		**DN 125**		**DN 150 OD 6" IPS 6"**	
Air supply pressure [min.]		Product pressure [max.]		Spring-to-close actuators (NC)											
bar	PSI	bar	PSI	NC [actuator]	NC [lifting actuator]	NC [actuator]	NC [lifting actuator]	NC [actuator]	NC [lifting actuator]	NC [actuator]	NC [lifting actuator]	NC [actuator]	NC [lifting actuator]	NC [actuator]	NC [lifting actuator]
8	116	4	58	BA	BLB	BB	BLB	**CD**	**CLB**	DF	CLB	EG6Z	EL6	EH6Z	EL6
		5	72	BA	BLB	BB	BLB	**CD**	**CLB**	DF	CLB	EH6Z	EL6	SK6Z	EL6
		6	87	BA	BLB	BB	BLB	**DF**	**CLB**	EG	DLB	EH6Z	EL6	SK6Z	EL6
		7	101	BA	BLB	CD	BLB	**DF**	**CLB**	EG	DLB	SK6Z	EL6	SM6Z	EL6
		8	116	BA	BLB	CD	BLB	**DF**	**CLB**	EG	DLB	SK6Z	EL6	UN6Z	EL6
		9	130	BB	BLB	CD	BLB	**DF**	**CLB**	EH	ELB	SM6Z	EL6	UN6Z	EL6
	(2)	10	145	BB	BLB	CD	BLB	**EG**	**DLB**	EH	ELB	SM6Z	EL6	–	–
7	**101**	4	58	BA	BLB	BB	BLB	**CD**	**CLB**	DF	DLB	EG6Z	EL6	EH6Z	EL6
		5	(3) 72	BA	BLB	BB	BLB	**CD**	**CLB**	DF	DLB	EH6Z	EL6	SK6Z	EL6
		6	**87**	**BA**	**BLB**	**BB**	**BLB**	**DF**	**DLB** (5)	**EG**	**ELB**	**SH6Z**	**EL6**	**SK6Z**	**EL6**
		7	101	BA	BLB	CD	CLB	**DF**	**DLB**	EG	ELB	SK6Z	EL6	SM6Z	SL6
		8	116	BA	BLB	CD	CLB	**DF**	**DLB**	EG	ELB	SK6Z	EL6	UN6Z	SL6
		9	130	BB	BLB	CD	CLB	**DF**	**DLB**	RH	ELB	SM6Z	SL6	UN6Z	SL6
		10	145	BB	BLB	CD	CLB	**EG**	**ELB**	RH	ELB	UM6Z	SL6	–	–
6	87	4	58	BA	BLB	BB	BLB	**CD**	**CLB**	DF	DLB	EG6Z	EL6	SH6Z	EL6
		5	72	BA	BLB	BB	BLB	**CD**	**CLB**	DF	DLB	SH6Z	EL6	SK6Z	EL6
		6	87	BA	BLB	BB	BLB	**DF**	**DLB**	EG	ELB	SH6Z	EL6	SK6Z	EL6
		7	101	BA	BLB	CD	CLB	**DF**	**DLB**	EG	ELB	SK6Z	EL6	UM6Z	SL6
		8	116	BA	BLB	CD	CLB	**DF**	**DLB**	RG	ELB	SK6Z	EL6	UN6Z	SL6
		9	130	BB	BLB	CD	CLB	**DF**	**DLB**	RH	ELB	UM6Z	SL6	UN6Z	SL6
		10	145	BB	BLB	CD	CLB	**EG**	**ELB**	RH	ELB	UM6Z	SL6	–	–
5	72	4	58	BA	BLB	BB	BLB	**CD**	**CLB**	EF	DLB	EG6Z	EL6	SH6Z	EL6
		5	72	BA	BLB	BB	BLB	**DD**	**CLB**	EF	DLB	SH6Z	EL6	TK6Z	SL6
		6	87	BA	BLB	CD	BLB	**EF**	**DLB**	RG	ELB	SH6Z	EL6	TK6Z	SL6
		7	101	BA	BLB	CD	CLB	**EF**	**DLB**	RG	ELB	TK6Z	SLB6	UM6Z	SL6
		8	116	BA	BLB	CD	CLB	**EF**	**DLB**	RG	ELB	TK6Z	SL6	–	–
		9	130	BB	BLB	CD	CLB	**EF**	**DLB**	–	–	UK6Z	SL6	–	–
		10	145	BB	BLB	DD	CLB	**RG**	**ELB**	–	–	UM6Z	SL6	–	–
4	58	4	58	BA	BLB	CB	CLB	**DD**	**DLB**	EF	ELB	SG6Z	EL6	TH6Z	SL6
		5	72	BA	BLB	CB	CLB	**DD**	**DLB**	EF	ELB	TH6Z	SL6	UK6Z	SL6
		6	87	BA	BLB	CB	CLB	**EF**	**ELB**	–	–	TH6Z	SL6	UK6Z	SL6
		7	101	BA	BLB	–	–	**EF**	**ELB**	–	–	UK6Z	SL6	–	–
		8	116	BA	BLB	–	–	**EF**	**ELB**	–	–	UK6Z	SL6	–	–
		9	130	CB	C LB	–	–	**EF**	**ELB**	–	–	–	–	–	–
		10	145	CB	CLB	–	–	**–**	**–**	–	–	–	–	–	–

Example:

1	Valve type	**VARIVENT® double-seat valve with lift function type D_L**	→	**5** Result	Actuator DF Lifting actuator DLB
2	Air supply pressure	**7 bar**			
3	Product pressure	**6 bar**			
4	Nominal width	**DN 65**			

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Shut-off Valves Type N

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths											
				DN 25 OD 1"		**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**		**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**		**DN 100 OD 4" IPS 4"**		**DN 125**		**DN 150 OD 6" IPS 6"**	
Air supply pressure [min.]		Product pressure [max.]		Spring-to-close actuators (NC) and spring-to-open actuators (NO)											
bar	PSI	bar	PSI	NC	NO	NC	NO	NC	NO	NC	NO	NC	NO	NC	NO
8	116	4	58	AA	AA	BB	BA	CD	BB	DF	DD	EG6Z	EF6A	EH6Z	EF6A
		5	72	AA	AA	BB	BA	CD	CB	DF	DD	EH6Z	EF6A	SK6Z	EG6A
		6	87	AA	AA	BB	BA	DF	CD	EG	DF	EH6Z	EF6A	SK6Z	SG6A
		7	101	AA	AA	CD	BB	DF	DD	EG	EF	SK6Z	EG6A	SM6Z	SH6A
		8	116	AA	AA	CD	BB	DF	DD	EG	EF	SK6Z	SG6A	UN6Z	SH6A
		9	130	BB	AA	CD	CB	DF	DD	EH	EG	SM6Z	SH6A	UN6Z	TK6A
		10	145	BB	AA	CD	CB	EG	DF	EH	RG	SM6Z	SH6A	–	TK6A
7	101	4	58	AA	AA	BB	BA	CD	CB	DF	DD	EG6Z	EF6A	EH6Z	EF6A
		5	72	AA	AA	BB	BA	CD	CB	DF	DD	EH6Z	EF6A	SK6Z	SG6A
		6	87	AA	AA	BB	BA	DF	DD	EG	EF	SH6Z	EF6A	SK6Z	SG6A
		7	101	AA	AA	CD	CB	DF	DD	EG	EF	SK6Z	SG6A	SM6Z	SH6A
		8	116	AA	AA	CD	CB	DF	DD	EG	EF	SK6Z	SG6A	UN6Z	TH6A
		9	130	BB	BA	CD	CB	DF	DD	RH	RG	SM6Z	SH6A	UN6Z	TK6A
		10	145	BB	BA	CD	CB	EG	EF	RH	RG	UM6Z	TH6A	–	UK6A
6	**87**	4	58	AA	AA	BB	BA	CD	CB	DF	DD	EG6Z	EF6A	SH6Z	EF6A
		5	**72**	**AA**	**AA**	**BB**	**BA**	**CD**	**CB**	**DF**	**DD**	**SH6Z**	**EF6A**	**SK6Z**	**SG6A**
		6	87	AA	BA	BB	BA	DF	DD	EG	EF	SH6Z	SG6A	SK6Z	SG6A
		7	101	AA	BA	CD	CB	DF	DD	EG	EF	SK6Z	SG6A	UM6Z	TH6A
		8	116	AA	BA	CD	CB	DF	DD	RG	EF	SK6Z	SG6A	UN6Z	TH6A
		9	130	BB	BA	CD	CB	DF	DD	RH	SG	UM6Z	TH6A	UN6Z	UK6A
		10	145	BB	BA	CD	CB	EG	EF	RH	SG	UM6Z	TH6A	–	UK6A
5	72	4	58	AA	BA	BB	BA	CD	CB	EF	DD	EG6Z	TF6A	SH6Z	TF6A
		5	72	AA	BA	BB	BA	DD	DB	EF	ED	SH6Z	TF6A	TK6Z	SG6A
		6	87	AA	BA	CB	CA	EF	DD	RG	RF	SH6Z	SG6A	TK6Z	TG6A
		7	101	BA	BA	CD	CB	EF	DD	RG	RF	TK6Z	SG6A	UM6Z	UH6A
		8	116	BA	BA	CD	CB	EF	ED	RG	RF	TK6Z	TG6A	–	UH6A
		9	130	BB	BA	DD	DB	EF	ED	SH	SG	UM6Z	UH6A	–	–
		10	145	BB	BA	DD	DB	RG	EF	SH	TG	UM6Z	UH6A	–	–
4	58	4	58	BA	BA	CB	CA	DD	DB	EF	ED	SG6Z	TF6A	TH6Z	TF6A
		5	72	BA	BA	CB	CA	DD	DB	EF	ED	TH6Z	TF6A	UK6Z	TG6A
		6	87	BA	BA	CB	CA	EF	ED	SG	RF	TH6Z	TF6A	UK6Z	UG6A
		7	101	BA	CA	DD	DB	EF	ED	SG	SF	UK6Z	TG6A	–	–
		8	116	BA	CA	DD	DB	EF	ED	SG	SF	UK6Z	UG6A	–	–
		9	130	CB	CA	DD	DB	EF	ED	TH	TG	–	–	–	–
		10	145	CB	CA	DD	DB	SG	RF	TH	–	–	–	–	–

Actuators R..., S..., T... and U... are made up of the actuator air /spring type S and booster cylinders as follows:

R...	=	actuator D	+ booster cylinder D
S...	=	actuator E	+ booster cylinder D
T...	=	actuator E	+ booster cylinder E
T...6	=	actuator E...6	+ booster cylinder E
U...6	=	actuator S...6	+ booster cylinder E

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Shut-off Valves Type N with TEFASEP® Gold Seat Gasket

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths							
				DN 25 OD 1"		**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**		**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**		**DN 100 OD 4" IPS 4"**	
Air supply pressure [min.]		Product pressure [max.]		Spring-to-close actuators (NC) and spring-to-open actuators (NO)							
bar	PSI	bar	PSI	NC	NO	NC	NO	NC	NO	NC	NO
8	116	4	58	AA	AA	BB	BA	CD	BB	DF	DD
		5	72	AA	AA	BB	BA	CD	CB	DF	DD
		6	87	AA	AA	BB	BA	DF	CD	EG	DF
7	101	4	58	AA	AA	BB	BA	CD	CB	DF	DD
		5	72	AA	AA	BB	BA	CD	CB	DF	DD
		6	87	AA	AA	BB	BA	DF	DD	EG	EF
6	**87**	4	58	AA	AA	BB	BA	CD	CB	DF	DD
		5	**72**	**AA**	**AA**	**BB**	**BA**	**CD**	**CB**	**DF**	**DD**
		6	87	AA	BA	BB	BA	DF	DD	EG	EF
5	72	4	58	AA	BA	BB	BA	CD	CB	EF	DD
		5	72	AA	BA	BB	BA	DD	DB	EF	ED
		6	87	AA	BA	CB	CA	EF	DD	RG	RF
4	58	4	58	BA	BA	CB	CA	DD	DB	EF	ED
		5	72	BA	BA	CB	CA	DD	DB	EF	ED
		6	87	BA	BA	CB	CA	EF	ED	SG	RF

Actuators R..., S..., T... and U... are made up of the actuator air /spring type S and booster cylinders as follows:

R...	=	actuator D	+ booster cylinder D
S...	=	actuator E	+ booster cylinder D
T...	=	actuator E	+ booster cylinder E

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
ECOVENT® Actuator Air/Spring
For ECOVENT® Shut-off Valves Type N/ECO

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths							
				DN 25 OD 1"		**DN 40 / DN 50 OD 1 ½" / OD 2"**		**DN 65 / DN 80 OD 2 ½" / OD 3"**		**DN 100 OD 4"**	
Air supply pressure [min.]		Product pressure [max.]		Spring-to-close actuators (NC) and spring-to-open actuators (NO)							
bar	PSI	bar	PSI	NC	NO	NC	NO	NC	NO	NC	NO
8	116	4	58	EAA	EAA	EBB	EBA	ECD	EBB	EDF	EDD
		5	72	EAA	EAA	EBB	EBA	ECD	ECB	EDF	EDD
		6	87	EAA	EAA	EBB	EBA	EDF	ECD	–	EDF
		7	101	EAA	EAA	ECD	EBB	EDF	EDD	–	–
		8	116	EAA	EAA	ECD	EBB	EDF	EDD	–	–
		9	130	EBB	EAA	ECD	ECB	EDF	EDD	–	–
		10	145	EBB	EAA	ECD	ECB	–	EDF	–	–
7	101	4	58	EAA	EAA	EBB	EBA	ECD	ECB	EDF	EDD
		5	72	EAA	EAA	EBB	EBA	ECD	ECB	EDF	EDD
		6	87	EAA	EAA	EBB	EBA	EDF	EDD	–	–
		7	101	EAA	EAA	ECD	ECB	EDF	EDD	–	–
		8	116	EAA	EAA	ECD	ECB	EDF	EDD	–	–
		9	130	EBB	EBA	ECD	ECB	EDF	EDD	–	–
		10	145	EBB	EBA	ECD	ECB	–	–	–	–
6	**87**	4	58	EAA	EAA	EBB	EBA	ECD	ECB	EDF	EDD
		5	**72**	**EAA**	**EAA**	**EBB**	**EBA**	**ECD**	**ECB**	**EDF**	**EDD**
		6	87	EAA	EBA	EBB	EBA	EDF	EDD	L+EDD	L+EDB
		7	101	EAA	EBA	ECD	ECB	EDF	EDD	L+EDD	L+EDB
		8	116	EAA	EBA	ECD	ECB	EDF	EDD	L+EDB	–
		9	130	EBB	EBA	ECD	ECB	EDF	EDD	L+EDB	–
		10	145	EBB	EBA	ECD	ECB	L+EDD	L+EDD	–	–
5	72	4	58	EAA	EBA	EBB	EBA	ECD	ECB	L+EDD	EDD
		5	72	EAA	EBA	EBB	EBA	EDD	EDB	L+EDD	L+EDB
		6	87	EAA	EBA	ECB	ECA	L+EDD	EDD	L+EDB	L+EDB
		7	101	EBA	EBA	ECD	ECB	L+EDD	EDD	L+EDB	–
		8	116	EBA	EBA	ECD	ECB	L+EDD	L+EDB	–	–
		9	130	EBB	EBA	EDD	EDB	L+EDD	L+EDB	–	–
		10	145	EBB	EBA	EDD	EDB	L+EDD	L+EDB	–	–
4	58	4	58	EBA	EBA	ECB	ECA	EDD	EDB	L+EDB	L+EDB
		5	72	EBA	EBA	ECB	ECA	EDD	EDB	L+EDB	–
		6	87	EBA	EBA	ECB	ECA	L+EDD	L+EDB	–	–
		7	101	EBA	ECA	EDD	EDB	L+EDD	L+EDB	–	–
		8	116	EBA	ECA	EDD	EDB	L+EDB	L+EDB	–	–
		9	130	ECB	ECA	EDD	EDB	L+EDB	L+EDB	–	–
		10	145	ECB	ECA	EDD	EDB	–	–	–	–

“L + actuator designation” indicates that this combination is only possible if the spring has air assistance. In this case, the actuator must be assisted by the corresponding air supply pressure (left column). The air pressure for assisting the actuator spring is allowed to be max. 6 bar (87 psi).

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Shut-off Valves Type U

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths											
				DN 25 OD 1"		**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**		**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**		**DN 100 OD 4" IPS 4"**		**DN 125**		**DN 150 OD 6" IPS 6"**	
Air supply pressure [min.]		Product pressure [max.]		Spring-to-close actuators (NC) and spring-to-open actuators (NO)											
bar	PSI	bar	PSI	NC	NO	NC	NO	NC	NO	NC	NO	NC	NO	NC	NO
8	116	4	58	AA	AA	BB	BA	CD	BB	DF	DD	EG6A	EF6Z	EH6A	EF6Z
		5	72	AA	AA	BB	BA	CD	CB	DF	DD	EH6A	EF6Z	SK6A	EG6Z
		6	87	AA	AA	BB	BA	DF	CD	EG	DF	EH6A	EF6Z	SK6A	SG6Z
		7	101	AA	AA	CD	BB	DF	DD	EG	EF	SK6A	EG6Z	SM6A	SH6Z
		8	116	AA	AA	CD	BB	DF	DD	EG	EF	SK6A	SG6Z	UN6A	SH6Z
		9	130	BB	AA	CD	CB	DF	DD	EH	EG	SM6A	SH6Z	UN6A	TK6Z
		10	145	BB	AA	CD	CB	EG	DF	EH	RG	SM6A	SH6Z	–	TK6Z
7	101	4	58	AA	AA	BB	BA	CD	CB	DF	DD	EG6A	EF6Z	EH6A	EF6Z
		5	72	AA	AA	BB	BA	CD	CB	DF	DD	EH6A	EF6Z	SK6A	SG6Z
		6	87	AA	AA	BB	BA	DF	DD	EG	EF	SH6A	EF6Z	SK6A	SG6Z
		7	101	AA	AA	CD	CB	DF	DD	EG	EF	SK6A	SG6Z	SM6A	SH6Z
		8	116	AA	AA	CD	CB	DF	DD	EG	EF	SK6A	SG6Z	UN6A	TH6Z
		9	130	BB	BA	CD	CB	DF	DD	RH	RG	SM6A	SH6Z	UN6A	TK6Z
		10	145	BB	BA	CD	CB	EG	EF	RH	RG	UM6A	TH6Z	–	UK6Z
6	**87**	4	58	AA	AA	BB	BA	CD	CB	DF	DD	EG6A	EF6Z	SH6A	EF6Z
		5	**72**	**AA**	**AA**	**BB**	**BA**	**CD**	**CB**	**DF**	**DD**	**SH6A**	**EF6Z**	**SK6A**	**SG6Z**
		6	87	AA	BA	BB	BA	DF	DD	EG	EF	SH6A	SG6Z	SK6A	SG6Z
		7	101	AA	BA	CD	CB	DF	DD	EG	EF	SK6A	SG6Z	UM6A	TH6Z
		8	116	AA	BA	CD	CB	DF	DD	RG	EF	SK6A	SG6Z	UN6A	TH6Z
		9	130	BB	BA	CD	CB	DF	DD	RH	SG	UM6A	TH6Z	UN6A	UK6Z
		10	145	BB	BA	CD	CB	EG	EF	RH	SG	UM6A	TH6Z	–	UK6Z
5	72	4	58	AA	BA	BB	BA	CD	CB	EF	DD	EG6A	TF6Z	SH6A	TF6Z
		5	72	AA	BA	BB	BA	DD	DB	EF	ED	SH6A	TF6Z	TK6A	SG6Z
		6	87	AA	BA	CB	CA	EF	DD	RG	RF	SH6A	SG6Z	TK6A	TG6Z
		7	101	BA	BA	CD	CB	EF	DD	RG	RF	TK6A	SG6Z	UM6A	UH6Z
		8	116	BA	BA	CD	CB	EF	ED	RG	RF	TK6A	TG6Z	–	UH6Z
		9	130	BB	BA	DD	DB	EF	ED	SH	SG	UM6A	UH6Z	–	–
		10	145	BB	BA	DD	DB	RG	EF	SH	TG	UM6A	UH6Z	–	–
4	58	4	58	BA	BA	CB	CA	DD	DB	EF	ED	SG6A	TF6Z	TH6A	TF6Z
		5	72	BA	BA	CB	CA	DD	DB	EF	ED	TH6A	TF6Z	UK6A	TG6Z
		6	87	BA	BA	CB	CA	EF	ED	SG	RF	TH6A	TF6Z	UK6A	UG6Z
		7	101	BA	CA	DD	DB	EF	ED	SG	SF	UK6A	TG6Z	–	–
		8	116	BA	CA	DD	DB	EF	ED	SG	SF	UK6A	UG6Z	–	–
		9	130	CB	CA	DD	DB	EF	ED	TH	TG	–	–	–	–
		10	145	CB	CA	DD	DB	SG	RF	TH	–	–	–	–	–

Actuators R..., S..., T... and U... are made up of the actuator air /spring type S and booster cylinders as follows:

R...	=	actuator D	+ booster cylinder D
S...	=	actuator E	+ booster cylinder D
T...	=	actuator E	+ booster cylinder E
T...6	=	actuator E...6	+ booster cylinder E
U...6	=	actuator S...6	+ booster cylinder E

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Divert Valves Type W

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths											
				DN 25 OD 1"		**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**		**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**		**DN 100 OD 4" IPS 4"**		**DN 125**		**DN 150 OD 6" IPS 6"**	
Air supply pressure [min.]		Product pressure [max.]		Spring-to-close actuators (NC) and spring-to-open actuators (NO)											
bar	PSI	bar	PSI	NC	NO	NC	NO	NC	NO	NC	NO	NC	NO	NC	NO
8	116	4	58	AA	AA	BB	BB	CD	CD	DF	DF	EG6Z	EG6A	SH6Z	SH6A
		5	72	AA	AA	BB	BB	CD	CD	DF	DF	SH6Z	SH6A	SK6Z	SK6A
		6	87	AA	AA	BB	BB	DF	DF	EG	EG	SH6Z	SH6A	SK6Z	SK6A
		7	101	AA	AA	CD	CD	DF	DF	EG	EG	SK6Z	SK6A	UM6Z	UM6A
		8	116	AA	AA	CD	CD	DF	DF	EG	EG	SK6Z	SK6A	UN6Z	UN6A
		9	130	BB	BB	CD	CD	DF	DF	RH	RH	UM6Z	UM6A	UN6Z	UN6A
		10	145	BB	BB	CD	CD	EG	EG	RH	RH	UM6Z	UM6A	–	–
7	101	4	58	AA	AA	BB	BB	CD	CD	DF	DF	EG6Z	EG6A	SH6Z	SH6A
		5	72	AA	AA	BB	BB	DD	DD	EF	EF	SH6Z	SH6A	SK6Z	SK6A
		6	87	AA	AA	BB	BB	DF	DF	EG	EG	SH6Z	SH6A	TK6Z	TK6A
		7	101	AA	AA	CD	CD	DF	DF	RG	RG	TK6Z	TK6A	UM6Z	UM6A
		8	116	AA	AA	CD	CD	EF	EF	RG	RG	TK6Z	TK6A	UN6Z	UN6A
		9	130	BB	BB	CD	CD	EF	EF	SH	SH	UM6Z	UM6A	UN6Z	UN6A
		10	145	BB	BB	DD	DD	EG	EG	SH	SH	UM6Z	UM6A	–	–
6	**87**	4	58	AA	AA	CB	CB	DD	DD	EF	EF	SG6Z	SG6A	SH6Z	SH6A
		5	**72**	**AA**	**AA**	**CB**	**CB**	**DD**	**DD**	**EF**	**EF**	**SH6Z**	**SH6A**	**TK6Z**	**TK6A**
		6	87	BA	BA	CB	CB	EF	EF	RG	RG	SH6Z	SH6A	TK6Z	TK6A
		7	101	BA	BA	DD	DD	EF	EF	RG	RG	TK6Z	TK6A	UM6Z	UM6A
		8	116	BA	BA	DD	DD	EF	EF	RG	RG	TK6Z	TK6A	–	–
		9	130	CB	CB	DD	DD	EF	EF	SH	SH	UM6Z	UM6A	–	–
		10	145	CB	CB	DD	DD	RG	RG	SH	SH	UM6Z	UM6A	–	–
5	72	4	58	BA	BA	CB	CB	DD	DD	EF	EF	SG6Z	SG6A	TH6Z	TH6A
		5	72	BA	BA	CB	CB	DD	DD	EF	EF	SH6Z	SH6A	UK6Z	UK6A
		6	87	BA	BA	CB	CB	EF	EF	SG	SG	TH6Z	TH6A	UK6Z	UK6A
		7	101	BA	BA	DD	DD	EF	EF	SG	SG	UK6Z	UK6A	–	–
		8	116	BA	BA	DD	DD	EF	EF	SG	SG	UK6Z	UK6A	–	–
		9	130	CB	CB	DD	DD	EF	EF	TH	TH	–	–	–	–
		10	145	CB	CB	DD	DD	SG	SG	TH	TH	–	–	–	–
4	58	4	58	BA	BA	CB	CB	DD	DD	RF	RF	TG6Z	TG6A	UH6Z	UH6A
		5	72	BA	BA	DB	DB	ED	ED	RF	RF	UH6Z	UH6A	–	–
		6	87	BA	BA	DB	DB	RF	RF	TG	TG	UH6Z	UH6A	–	–
		7	101	CA	CA	DD	DD	RF	RF	TG	TG	–	–	–	–
		8	116	CA	CA	DD	DD	RF	RF	TG	TG	–	–	–	–
		9	130	CB	CB	ED	ED	RF	RF	–	–	–	–	–	–
		10	145	DB	DB	ED	ED	TG	TG	–	–	–	–	–	–

Actuators R..., S..., T... and U... are made up of the actuator air /spring type S and booster cylinders as follows:

R...	=	actuator D	+ booster cylinder D
S...	=	actuator E	+ booster cylinder D
T...	=	actuator E	+ booster cylinder E
T...6	=	actuator E...6	+ booster cylinder E
U...6	=	actuator S...6	+ booster cylinder E

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Divert Valves Type W with TEFASEP® Gold Seat Gasket

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths							
				DN 25 OD 1"		**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**		**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**		**DN 100 OD 4" IPS 4"**	
Air supply pressure [min.]		Product pressure [max.]		Spring-to-close actuators (NC) and spring-to-open actuators (NO)							
bar	PSI	bar	PSI	NC	NO	NC	NO	NC	NO	NC	NO
8	116	4	58	AA	AA	BB	BB	CD	CD	DF	DF
		5	72	AA	AA	BB	BB	CD	CD	DF	DF
		6	87	AA	AA	BB	BB	DF	DF	EG	EG
7	101	4	58	AA	AA	BB	BB	CD	CD	DF	DF
		5	72	AA	AA	BB	BB	DD	DD	EF	EF
		6	87	AA	AA	BB	BB	DF	DF	EG	EG
6	**87**	4	58	AA	AA	CB	CB	DD	DD	EF	EF
		5	**72**	**AA**	**AA**	**CB**	**CB**	**DD**	**DD**	**EF**	**EF**
		6	87	BA	BA	CB	CB	EF	EF	RG	RG
5	72	4	58	BA	BA	CB	CB	DD	DD	EF	EF
		5	72	BA	BA	CB	CB	DD	DD	EF	EF
		6	87	BA	BA	CB	CB	EF	EF	SG	SG
4	58	4	58	BA	BA	CB	CB	DD	DD	RF	RF
		5	72	BA	BA	DB	DB	ED	ED	RF	RF
		6	87	BA	BA	DB	DB	RF	RF	TG	TG

Actuators R..., S..., T... and U... are made up of the actuator air /spring type S and booster cylinders as follows:

R...	=	actuator D	+ booster cylinder D
S...	=	actuator E	+ booster cylinder D
T...	=	actuator E	+ booster cylinder E

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
ECOVENT® Actuator Air/Spring
For ECOVENT® Divert Valves Type W/ECO

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths							
				DN 25 OD 1"		**DN 40 / DN 50 OD 1 ½" / OD 2"**		**DN 65 / DN 80 OD 2 ½" / OD 3"**		**DN 100 OD 4"**	
Air supply pressure [min.]		Product pressure [max.]		Spring-to-close actuators (NC) and spring-to-open actuators (NO)							
bar	PSI	bar	PSI	NC	NO	NC	NO	NC	NO	NC	NO
8	116	4	58	EAA	EAA	EBB	EBB	ECD	ECD	EDF	EDF
		5	72	EAA	EAA	EBB	EBB	ECD	ECD	EDF	EDF
		6	87	EAA	EAA	EBB	EBB	EDF	EDF	–	–
		7	101	EAA	EAA	ECD	ECD	EDF	EDF	–	–
		8	116	EAA	EAA	ECD	ECD	EDF	EDF	–	–
		9	130	EBB	EBB	ECD	ECD	EDF	EDF	–	–
		10	145	EBB	EBB	ECD	ECD	–	–	–	–
7	101	4	58	EAA	EAA	EBB	EBB	ECD	ECD	EDF	EDF
		5	72	EAA	EAA	EBB	EBB	EDD	EDD	–	–
		6	87	EAA	EAA	EBB	EBB	EDF	EDF	–	–
		7	101	EAA	EAA	ECD	ECD	EDF	EDF	–	–
		8	116	EAA	EAA	ECD	ECD	–	–	–	–
		9	130	EBB	EBB	ECD	ECD	–	–	–	–
		10	145	EBB	EBB	EDD	EDD	–	–	–	–
6	**87**	4	58	EAA	EAA	ECB	ECB	EDD	EDD	L+EDD	L+EDD
		5	**72**	**EAA**	**EAA**	**ECB**	**ECB**	**EDD**	**EDD**	**L+EDD**	**L+EDD**
		6	87	EBA	EBA	ECB	ECB	L+EDD	L+EDD	L+EDB	L+EDB
		7	101	EBA	EBA	EDD	EDD	L+EDD	L+EDD	L+EDB	L+EDB
		8	116	EBA	EBA	EDD	EDD	L+EDD	L+EDD	–	–
		9	130	ECB	ECB	EDD	EDD	L+EDD	L+EDD	–	–
		10	145	ECB	ECB	EDD	EDD	L+EDD	L+EDD	–	–
5	72	4	58	EBA	EBA	ECB	ECB	EDD	EDD	L+EDD	L+EDD
		5	72	EBA	EBA	ECB	ECB	EDD	EDD	L+EDB	L+EDB
		6	87	EBA	EBA	ECB	ECB	L+EDD	L+EDD	L+EDB	L+EDB
		7	101	EBA	EBA	EDD	EDD	L+EDD	L+EDD	–	–
		8	116	EBA	EBA	EDD	EDD	L+EDB	L+EDB	–	–
		9	130	ECB	ECB	EDD	EDD	L+EDB	L+EDB	–	–
		10	145	ECB	ECB	EDD	EDD	L+EDB	L+EDB	–	–
4	58	4	58	EBA	EBA	ECB	ECB	EDD	EDD	L+EDB	L+EDB
		5	72	EBA	EBA	EDB	EDB	L+EDB	L+EDB	–	–
		6	87	EBA	EBA	EDB	EDB	L+EDB	L+EDB	–	–
		7	101	ECA	ECA	EDD	EDD	L+EDB	L+EDB	–	–
		8	116	ECA	ECA	EDD	EDD	–	–	–	–
		9	130	ECB	ECB	L+EDB	L+EDB	–	–	–	–
		10	145	EDB	EDB	L+EDB	L+EDB	–	–	–	–

“L + actuator designation” indicates that this combination is only possible if the spring has air assistance. In this case, the actuator must be assisted by the corresponding air supply pressure (left column). The air pressure for assisting the actuator spring is allowed to be max. 6 bar (87 psi).

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Divert Valves Type X

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths											
				DN 25 OD 1"		**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**		**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**		**DN 100 OD 4" IPS 4"**		**DN 125**		**DN 150 OD 6" IPS 6"**	
Air supply pressure [min.]		Product pressure [max.]		Spring-to-close actuators (NC) and spring-to-open actuators (NO)											
bar	PSI	bar	PSI	NC	NO	NC	NO	NC	NO	NC	NO	NC	NO	NC	NO
8	116	4	58	AA	AA	BB	BB	CD	CD	DF	DF	EG6Z	EG6A	SH6Z	SH6A
		5	72	AA	AA	BB	BB	CD	CD	DF	DF	SH6Z	SH6A	SK6Z	SK6A
		6	87	AA	AA	BB	BB	DF	DF	EG	EG	SH6Z	SH6A	SK6Z	SK6A
		7	101	AA	AA	CD	CD	DF	DF	EG	EG	SK6Z	SK6A	UM6Z	UM6A
		8	116	AA	AA	CD	CD	DF	DF	EG	EG	SK6Z	SK6A	UN6Z	UN6A
		9	130	BB	BB	CD	CD	DF	DF	RH	RH	UM6Z	UM6A	UN6Z	UN6A
		10	145	BB	BB	CD	CD	EG	EG	RH	RH	UM6Z	UM6A	–	–
7	101	4	58	AA	AA	BB	BB	CD	CD	DF	DF	EG6Z	EG6A	SH6Z	SH6A
		5	72	AA	AA	BB	BB	DD	DD	EF	EF	SH6Z	SH6A	SK6Z	SK6A
		6	87	AA	AA	BB	BB	DF	DF	EG	EG	SH6Z	SH6A	TK6Z	TK6A
		7	101	AA	AA	CD	CD	DF	DF	RG	RG	TK6Z	TK6A	UM6Z	UM6A
		8	116	AA	AA	CD	CD	EF	EF	RG	RG	TK6Z	TK6A	UN6Z	UN6A
		9	130	BB	BB	CD	CD	EF	EF	SH	SH	UM6Z	UM6A	UN6Z	UN6A
		10	145	BB	BB	DD	DD	EG	EG	SH	SH	UM6Z	UM6A	–	–
6	**87**	4	58	AA	AA	CB	CB	DD	DD	EF	EF	SG6Z	SG6A	SH6Z	SH6A
		5	**72**	**AA**	**AA**	**CB**	**CB**	**DD**	**DD**	**EF**	**EF**	**SH6Z**	**SH6A**	**TK6Z**	**TK6A**
		6	87	BA	BA	CB	CB	EF	EF	RG	RG	SH6Z	SH6A	TK6Z	TK6A
		7	101	BA	BA	DD	DD	EF	EF	RG	RG	TK6Z	TK6A	UM6Z	UM6A
		8	116	BA	BA	DD	DD	EF	EF	RG	RG	TK6Z	TK6A	–	–
		9	130	CB	CB	DD	DD	EF	EF	SH	SH	UM6Z	UM6A	–	–
		10	145	CB	CB	DD	DD	RG	RG	SH	SH	UM6Z	UM6A	–	–
5	72	4	58	BA	BA	CB	CB	DD	DD	EF	EF	SG6Z	SG6A	TH6Z	TH6A
		5	72	BA	BA	CB	CB	DD	DD	EF	EF	SH6Z	SH6A	UK6Z	UK6A
		6	87	BA	BA	CB	CB	EF	EF	SG	SG	TH6Z	TH6A	UK6Z	UK6A
		7	101	BA	BA	DD	DD	EF	EF	SG	SG	UK6Z	UK6A	–	–
		8	116	BA	BA	DD	DD	EF	EF	SG	SG	UK6Z	UK6A	–	–
		9	130	CB	CB	DD	DD	EF	EF	TH	TH	–	–	–	–
		10	145	CB	CB	DD	DD	SG	SG	TH	TH	–	–	–	–
4	58	4	58	BA	BA	CB	CB	DD	DD	RF	RF	TG6Z	TG6A	UH6Z	UH6A
		5	72	BA	BA	DB	DB	ED	ED	RF	RF	UH6Z	UH6A	–	–
		6	87	BA	BA	DB	DB	RF	RF	TG	TG	UH6Z	UH6A	–	–
		7	101	CA	CA	DD	DD	RF	RF	TG	TG	–	–	–	–
		8	116	CA	CA	DD	DD	RF	RF	TG	TG	–	–	–	–
		9	130	CB	CB	ED	ED	RF	RF	–	–	–	–	–	–
		10	145	DB	DB	ED	ED	TG	TG	–	–	–	–	–	–

Actuators R..., S..., T... and U... are made up of the actuator air /spring type S and booster cylinders as follows:

R...	=	actuator D	+ booster cylinder D
S...	=	actuator E	+ booster cylinder D
T...	=	actuator E	+ booster cylinder E
T...6	=	actuator E...6	+ booster cylinder E
U...6	=	actuator S...6	+ booster cylinder E

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Double-seat Valves Type D

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths					
				DN 25 OD 1"	**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**	**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**	**DN 100 OD 4" IPS 4"**	**DN 125**	**DN 150 OD 6" IPS 6"**
Air supply pressure [min.]		Product pressure [max.]							
bar	PSI	bar	PSI	Actuator	Actuator	Actuator	Actuator	Actuator	Actuator
8	116	4	58	AA	BB	CD	DF	EG6Z	EH6Z
		5	72	AA	BB	CD	DF	EH6Z	SK6Z
		6	87	AA	BB	DF	EG	EH6Z	SK6Z
		7	101	AA	CD	DF	EG	SK6Z	SM6Z
		8	116	AA	CD	DF	EG	SK6Z	UN6Z
		9	130	BB	CD	DF	EH	SM6Z	UN6Z
		10	145	BB	CD	EG	EH	SM6Z	–
7	101	4	58	AA	BB	CD	DF	EG6Z	EH6Z
		5	72	AA	BB	CD	DF	EH6Z	SK6Z
		6	87	AA	BB	DF	EG	SH6Z	SK6Z
		7	101	AA	CD	DF	EG	SK6Z	SM6Z
		8	116	AA	CD	DF	EG	SK6Z	UN6Z
		9	130	BB	CD	DF	RH	SM6Z	UN6Z
		10	145	BB	CD	EG	RH	UM6Z	–
6	**87**	4	58	AA	BB	CD	DF	EG6Z	SH6Z
		5	**72**	**AA**	**BB**	**CD**	**DF**	**SH6Z**	**SK6Z**
		6	87	AA	BB	DF	EG	SH6Z	SK6Z
		7	101	AA	CD	DF	EG	SK6Z	UM6Z
		8	116	AA	CD	DF	RG	SK6Z	UN6Z
		9	130	BB	CD	DF	RH	UM6Z	UN6Z
		10	145	BB	CD	EG	RH	UM6Z	–
5	72	4	58	AA	BB	CD	EF	EG6Z	SH6Z
		5	72	AA	BB	DD	EF	SH6Z	TK6Z
		6	87	AA	CB	EF	RG	SH6Z	TK6Z
		7	101	BA	CD	EF	RG	TK6Z	UM6Z
		8	116	BA	CD	EF	RG	TK6Z	–
		9	130	BB	DD	EF	SH	UM6Z	–
		10	145	BB	DD	RG	SH	UM6Z	–
4	58	4	58	BA	CB	DD	EF	SG6Z	TH6Z
		5	72	BA	CB	DD	EF	TH6Z	UK6Z
		6	87	BA	CB	EF	SG	TH6Z	UK6Z
		7	101	BA	DD	EF	SG	UK6Z	–
		8	116	BA	DD	EF	SG	UK6Z	–
		9	130	CB	DD	EF	TH	–	–
		10	145	CB	DD	SG	TH	–	–

Actuators R..., S..., T... and U... are made up of the actuator air /spring type S and booster cylinders as follows:

R...	=	actuator D	+ booster cylinder D
S...	=	actuator E	+ booster cylinder D
T...	=	actuator E	+ booster cylinder E
T...6	=	actuator E...6	+ booster cylinder E
U...6	=	actuator S...6	+ booster cylinder E

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Double-seat Valves with Lifting Actuator Type D_L and Type D_C

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths											
				DN 25 OD 1"		**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**		**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**		**DN 100 OD 4" IPS 4"**		**DN 125**		**DN 150 OD 6" IPS 6"**	
Air supply pressure [min.]		Product pressure [max.]													
bar	PSI	bar	PSI	Actuator	Lifting actuator*	Actuator	Lifting actuator*	Actuator	Lifting actuator*	Actuator	Lifting actuator	Actuator	Lifting actuator	Actuator	Lifting actuator
8	116	4	58	BA	BLB	BB	BLB	CD	CLB	DF	CLB	EG6Z	EL6	EH6Z	EL6
		5	72	BA	BLB	BB	BLB	CD	CLB	DF	CLB	EH6Z	EL6	SK6Z	EL6
		6	87	BA	BLB	BB	BLB	DF	CLB	EG	DLB	EH6Z	EL6	SK6Z	EL6
		7	101	BA	BLB	CD	BLB	DF	CLB	EG	DLB	SK6Z	EL6	SM6Z	EL6
		8	116	BA	BLB	CD	BLB	DF	CLB	EG	DLB	SK6Z	EL6	UN6Z	EL6
		9	130	BB	BLB	CD	BLB	DF	CLB	EH	ELB	SM6Z	EL6	UN6Z	EL6
		10	145	BB	BLB	CD	BLB	EG	DLB	EH	ELB	SM6Z	EL6	–	–
7	101	4	58	BA	BLB	BB	BLB	CD	CLB	DF	DLB	EG6Z	EL6	EH6Z	EL6
		5	72	BA	BLB	BB	BLB	CD	CLB	DF	DLB	EH6Z	EL6	SK6Z	EL6
		6	87	BA	BLB	BB	BLB	DF	DLB	EG	ELB	SH6Z	EL6	SK6Z	EL6
		7	101	BA	BLB	CD	CLB	DF	DLB	EG	ELB	SK6Z	EL6	SM6Z	SL6
		8	116	BA	BLB	CD	CLB	DF	DLB	EG	ELB	SK6Z	EL6	UN6Z	SL6
		9	130	BB	BLB	CD	CLB	DF	DLB	RH	ELB	SM6Z	SL6	UN6Z	SL6
		10	145	BB	BLB	CD	CLB	EG	ELB	RH	ELB	UM6Z	SL6	–	–
6	**87**	4	58	BA	BLB	BB	BLB	CD	CLB	DF	DLB	EG6Z	EL6	SH6Z	EL6
		5	**72**	**BA**	**BLB**	**BB**	**BLB**	**CD**	**CLB**	**DF**	**DLB**	**SH6Z**	**EL6**	**SK6Z**	**EL6**
		6	87	BA	BLB	BB	BLB	DF	DLB	EG	ELB	SH6Z	EL6	SK6Z	EL6
		7	101	BA	BLB	CD	CLB	DF	DLB	EG	ELB	SK6Z	EL6	UM6Z	SL6
		8	116	BA	BLB	CD	CLB	DF	DLB	RG	ELB	SK6Z	EL6	UN6Z	SL6
		9	130	BB	BLB	CD	CLB	DF	DLB	RH	ELB	UM6Z	SL6	UN6Z	SL6
		10	145	BB	BLB	CD	CLB	EG	ELB	RH	ELB	UM6Z	SL6	–	–
5	72	4	58	BA	BLB	BB	BLB	CD	CLB	EF	DLB	EG6Z	EL6	SH6Z	EL6
		5	72	BA	BLB	BB	BLB	DD	CLB	EF	DLB	SH6Z	EL6	TK6Z	SL6
		6	87	BA	BLB	CD	BLB	EF	DLB	RG	ELB	SH6Z	EL6	TK6Z	SL6
		7	101	BA	BLB	CD	CLB	EF	DLB	RG	ELB	TK6Z	SLB6	UM6Z	SL6
		8	116	BA	BLB	CD	CLB	EF	DLB	RG	ELB	TK6Z	SL6	–	–
		9	130	BB	BLB	CD	CLB	EF	DLB	–	–	UK6Z	SL6	–	–
		10	145	BB	BLB	DD	CLB	RG	ELB	–	–	UM6Z	SL6	–	–
4	58	4	58	BA	BLB	CB	CLB	DD	DLB	EF	ELB	SG6Z	EL6	TH6Z	SL6
		5	72	BA	BLB	CB	CLB	DD	DLB	EF	ELB	TH6Z	SL6	UK6Z	SL6
		6	87	BA	BLB	CB	CLB	EF	ELB	–	–	TH6Z	SL6	UK6Z	SL6
		7	101	BA	BLB	–	–	EF	ELB	–	–	UK6Z	SL6	–	–
		8	116	BA	BLB	–	–	EF	ELB	–	–	UK6Z	SL6	–	–
		9	130	CB	CLB	–	–	EF	ELB	–	–	–	–	–	–
		10	145	CB	CLB	–	–	–	–	–	–	–	–	–	–

* The lifting actuator also has a supplement, depending on the nominal width.

Actuators R..., T... and U... are made up of the actuator air /spring type S and booster cylinders as follows:

R...	=	actuator D	+ booster cylinder D
T...6	=	actuator E...6	+ booster cylinder E
U...6	=	actuator S...6	+ booster cylinder E

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Double-seat Valves Type B

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths				
				IPS 2"	**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**	**DN 100 OD 4" IPS 4"**	**DN 125**	**DN 150 OD 6" IPS 6"**
Air supply pressure [min.]		Product pressure [max.]						
bar	PSI	bar	PSI	Actuator	Actuator	Actuator	Actuator	Actuator
8	116	4	58	BB	CD	DF	EF6Z	EG6Z
		5	72	BB	CD	DF	EF6Z	EG6Z
		6	87	BB	CD	DF	EF6Z	EG6Z
		7	101	BB	CD	DF	EF6Z	SG6Z
		8	116	BB	CD	EF	EF6Z	SG6Z
		9	130	BB	CD	EF	EF6Z	SG6Z
		10	145	BB	DD	EF	EF6Z	SG6Z
7	101	4	58	BB	CD	DF	EF6Z	EG6Z
		5	72	BB	CD	DF	EF6Z	SG6Z
		6	87	BB	CD	DF	EF6Z	SG6Z
		7	101	BB	CD	EF	EF6Z	SG6Z
		8	116	BB	CD	EF	EF6Z	SG6Z
		9	130	BB	DD	EF	TF6Z	SG6Z
		10	145	CB	DD	EF	TF6Z	SG6Z
6	**87**	4	58	BB	CD	EF	EF6Z	SG6Z
		5	**72**	**BB**	**DD**	**EF**	**EF6Z**	**SG6Z**
		6	87	BB	DD	EF	EF6Z	SG6Z
		7	101	BB	DD	EF	TF6Z	SG6Z
		8	116	CB	DD	EF	TF6Z	SG6Z
		9	130	CB	DD	EF	TF6Z	SG6Z
		10	145	CB	DD	EF	TF6Z	TG6Z
5	72	4	58	CB	DD	EF	EF6Z	SG6Z
		5	72	CB	DD	EF	TF6Z	SG6Z
		6	87	CB	DD	EF	TF6Z	SG6Z
		7	101	CB	DD	EF	TF6Z	TG6Z
		8	116	CB	DD	RF	TF6Z	TG6Z
		9	130	CB	DD	RF	TF6Z	TG6Z
		10	145	CB	ED	RF	TF6Z	–
4	58	4	58	CB	DD	RF	TF6Z	TG6Z
		5	72	CB	DD	RF	TF6Z	TG6Z
		6	87	CB	DD	RF	TF6Z	TG6Z
		7	101	CB	ED	RF	TF6Z	–
		8	116	DB	ED	–	TF6Z	–
		9	130	DB	ED	–	TF6Z	–
		10	145	DB	ED	–	TF6Z	–

Actuators R... and T... are made up of the actuator air / spring type S and booster cylinders as follows:

R... = actuator D + booster cylinder D
T...6 = actuator E...6 + booster cylinder E

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Double-seat Valves with Lifting Actuator Type B_L and Type B_C

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths									
				IPS 2"		**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**		**DN 100 OD 4" IPS 4"**		**DN 125**		**DN 150 OD 6" IPS 6"**	
Air supply pressure [min.]		Product pressure [max.]											
bar	PSI	bar	PSI	Actuator	Lifting actuator*	Actuator	Lifting actuator*	Actuator	Lifting actuator*	Actuator	Lifting actuator*	Actuator	Lifting actuator*
8	116	4	58	BB	BLB	CD	CLB	DF	CLB	EF6Z	EL6	EG6Z	EL6
		5	72	BB	BLB	CD	CLB	DF	CLB	EF6Z	EL6	EG6Z	EL6
		6	87	BB	BLB	CD	CLB	DF	CLB	EF6Z	EL6	EG6Z	EL6
		7	101	BB	BLB	CD	CLB	DF	DLB	EF6Z	EL6	SG6Z	EL6
		8	116	BB	BLB	CD	CLB	EF	DLB	EF6Z	EL6	SG6Z	EL6
		9	130	BB	BLB	CD	CLB	EF	DLB	EF6Z	EL6	SG6Z	EL6
		10	145	BB	BLB	DD	CLB	EF	DLB	EF6Z	EL6	SG6Z	SL6
7	101	4	58	BB	BLB	CD	CLB	DF	DLB	EF6Z	EL6	EG6Z	EL6
		5	72	BB	BLB	CD	CLB	DF	DLB	EF6Z	EL6	EG6Z	EL6
		6	87	BB	BLB	CD	CLB	EF	DLB	EF6Z	EL6	SG6Z	EL6
		7	101	BB	BLB	CD	CLB	EF	DLB	EF6Z	EL6	SG6Z	EL6
		8	116	BB	BLB	DD	CLB	EF	DLB	EF6Z	EL6	SG6Z	EL6
		9	130	BB	BLB	DD	CLB	EF	DLB	TF6Z	EL6	SG6Z	EL6
		10	145	CB	BLB	DD	CLB	EF	DLB	TF6Z	EL6	SG6Z	SL6
6	**87**	4	58	BB	BLB	CD	CLB	EF	DLB	EF6Z	EL6	SG6Z	EL6
		5	**72**	**BB**	**BLB**	**DD**	**CLB**	**EF**	**DLB**	**EF6Z**	**EL6**	**SG6Z**	**EL6**
		6	87	BB	BLB	DD	CLB	EF	DLB	EF6Z	EL6	SG6Z	EL6
		7	101	BB	BLB	DD	CLB	EF	DLB	TF6Z	EL6	SG6Z	EL6
		8	116	CB	BLB	DD	CLB	EF	DLB	TF6Z	EL6	SG6Z	EL6
		9	130	CB	BLB	DD	CLB	EF	ELB	TF6Z	EL6	SG6Z	SL6
		10	145	CB	BLB	DD	DLB	EF	ELB	TF6Z	SL6	TF6Z	SL6
5	72	4	58	CB	BLB	DD	CLB	EF	DLB	EF6Z	EL6	SG6Z	EL6
		5	72	CB	BLB	DD	CLB	EF	DLB	EF6Z	EL6	SG6Z	EL6
		6	87	CB	BLB	DD	CLB	EF	DLB	EF6Z	EL6	SG6Z	SL6
		7	101	CB	BLB	DD	CLB	EF	DLB	EF6Z	EL6	TF6Z	SL6
		8	116	CB	BLB	DD	DLB	RF	ELB	TF6Z	SL6	TF6Z	SL6
		9	130	CB	CLB	DD	DLB	RF	ELB	TF6Z	SL6	TF6Z	SL6
		10	145	CB	CLB	ED	DLB	RF	ELB	TF6Z	SL6	–	–
4	58	4	58	BA	BLB	CB	CLB	EF	ELB	SG6Z	EL6	TH6Z	SL6
		5	72	BA	BLB	CB	CLB	EF	ELB	TH6Z	SL6	UK6Z	SL6
		6	87	BA	BLB	CB	CLB	–	–	TH6Z	SL6	UK6Z	SL6
		7	101	BA	BLB	–	–	–	–	UK6Z	SL6	–	–
		8	116	BA	BLB	–	–	–	–	UK6Z	SL6	–	–
		9	130	CB	C LB	–	–	–	–	–	–	–	–
		10	145	CB	CLB	–	–	–	–	–	–	–	–

* The lifting actuator also has a supplement, depending on the nominal width.

Actuators R... and T... are made up of the actuator air / spring type S and booster cylinders as follows:

R... = actuator D + booster cylinder D
T...6 = actuator E...6 + booster cylinder E

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Double-seat Valves Type R

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths						
				DN 25 OD 1"	**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**	**DN 65 OD 2 ½"**	**DN 80 OD 3" IPS 3"**	**DN 100 OD 4" IPS 4"**	**DN 125**	**DN 150 OD 6" IPS 6"**
Air supply pressure [min.]		Product pressure [max.]								
bar	PSI	bar	PSI	Actuator	Actuator	Actuator	Actuator	Actuator	Actuator	Actuator
8	116	4	58	CD	CD	DD	DD5	DD5	EF6Z	EF6Z
		5	72	CD	CD	DD	DD5	DD5	EF6Z	EF6Z
		6	87	CD	CD	DD	DD5	DD5	EF6Z	EF6Z
		7	101	CD	CD	DD	DD5	DD5	EF6Z	EF6Z
		8	116	CD	CD	DD	DD5	DD5	EF6Z	EF6Z
		9	130	CD	CD	DD	DD5	DD5	EF6Z	RF6Z
		10	145	CD	CD	DD	DD5	DD5	EF6Z	RF6Z
7	101	4	58	CD	CD	DD	DD5	DD5	EF6Z	EF6Z
		5	72	CD	CD	DD	DD5	DD5	EF6Z	EF6Z
		6	87	CD	CD	DD	DD5	DD5	EF6Z	EF6Z
		7	101	CD	CD	DD	DD5	DD5	EF6Z	RF6Z
		8	116	CD	CD	DD	DD5	DD5	EF6Z	RF6Z
		9	130	CD	CD	DD	DD5	ED5	RF6Z	RF6Z
		10	145	CD	CD	DD	DD5	ED5	RF6Z	RF6Z
6	**87**	4	58	CD	CD	DD	DD5	DD5	EF6Z	EF6Z
		5	**72**	**CD**	**CD**	**DD**	**DD5**	**DD5**	**EF6Z**	**RF6Z**
		6	87	CD	CD	DD	DD5	DD5	EF6Z	RF6Z
		7	101	CD	CD	DD	DD5	ED5	RF6Z	RF6Z
		8	116	CD	CD	DD	DD5	ED5	RF6Z	RF6Z
		9	130	CD	CD	DD	DD5	ED5	RF6Z	RF6Z
		10	145	CD	CD	DD	DD5	ED5	RF6Z	RF6Z
5	72	4	58	CD	DD	DD	DD5	DD5	RF6Z	RF6Z
		5	72	CD	DD	DD	DD5	ED5	RF6Z	RF6Z
		6	87	CD	DD	DD	DD5	ED5	RF6Z	RF6Z
		7	101	CD	DD	DD	DD5	ED5	RF6Z	RF6Z
		8	116	CD	DD	DD	DD5	ED5	RF6Z	TF6Z
		9	130	CD	DD	ED	ED5	ED5	RF6Z	TF6Z
		10	145	CD	DD	ED	ED5	ED5	RF6Z	TF6Z
4	58	4	58	DD	DD	DD	DD5	ED5	RF6Z	RF6Z
		5	72	DD	DD	DD	DD5	ED5	RF6Z	RF6Z
		6	87	DD	DD	ED	ED5	ED5	RF6Z	TF6Z
		7	101	DD	DD	ED	ED5	ED5	RF6Z	TF6Z
		8	116	DD	DD	ED	ED5	RD5	TF6Z	TF6Z
		9	130	DD	DD	ED	ED5	RD5	TF6Z	UG6Z
		10	145	DD	DD	ED	ED5	RD5	TF6Z	UG6Z

Actuators R..., T... and U... are made up of the actuator air /spring type S and booster cylinders as follows:

R...5 = actuator D...5 + booster cylinder D
R...6 = actuator D...6 + booster cylinder E
T...6 = actuator E...6 + booster cylinder E
U...6 = actuator S...6 + booster cylinder E

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Double-seat Valves with Lifting Actuator Type R_L and Type R_C

The standard configuration has 6 bar air supply pressure for 10 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths									
				DN 25 OD 1"		**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**		**DN 65 OD 2 ½"**		**DN 80 OD 3" IPS 3"**		**DN 100 OD 4" IPS 4"**	
Air supply pressure [min.]		Product pressure [max.]											
bar	PSI	bar	PSI	Actuator	Lifting actuator*	Actuator	Lifting actuator*	Actuator	Lifting actuator*	Actuator	Lifting actuator*	Actuator	Lifting actuator
8	116	4	58	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		5	72	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		6	87	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		7	101	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		8	116	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		9	130	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		10	145	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
7	101	4	58	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		5	72	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		6	87	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		7	101	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		8	116	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		9	130	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		10	145	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
6	**87**	4	58	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		5	**72**	**BD**	**BLR**	**BD**	**BLR**	**BD**	**CLR**	**BD5**	**CLR5**	**BE5**	**DLR5**
		6	87	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		7	101	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		8	116	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		9	130	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		10	145	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
5	72	4	58	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		5	72	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		6	87	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	DLR5
		7	101	BD	BLR	BD	BLR	BD	CLR	BD5	CLR5	BE5	ELR5
		8	116	BD	BLR	BD	BLR	BD	DLR	BD5	DLR5	BE5	ELR5
		9	130	BD	BLR	BD	CLR	BD	DLR	BD5	DLR5	BE5	ELR5
		10	145	BD	BLR	BD	CLR	BD	DLR	BD5	DLR5	BE5	ELR5
4	58	4	58	BD	CLR	BD	CLR	BD	DLR	BD5	DLR5	BE5	ELR5
		5	72	BD	CLR	BD	CLR	BD	DLR	BD5	DLR5	BE5	ELR5
		6	87	BD	CLR	BD	DLR	BD	DLR	BD5	ELR5	CE5	ELR5
		7	101	BD	CLR	BD	DLR	BD	DLR	BD5	ELR5	CE5	ELR5
		8	116	BD	CLR	BD	DLR	BD	ELR	BD5	ELR5	DE5	ELR5
		9	130	BD	CLR	BD	DLR	BD	ELR	BD5	ELR5	DE5	ELR5
		10	145	BD	CLR	BD	DLR	BD	ELR	BD5	ELR5	DE5	ELR5

* The lifting actuator also has a supplement, depending on the nominal width.

DN 125		DN 150 OD 6" IPS 6"	
Actuator	Lifting actuator	Actuator	Lifting actuator
DG6Z	ELR6	DG6Z	ELR6
DG6Z	ELR6	DG6Z	ELR6
DG6Z	ELR6	DG6Z	ELR6
DG6Z	ELR6	DG6Z	ELR6
DG6Z	ELR6	DG6Z	ELR6
DG6Z	ELR6	DG6Z	ELR6
DG6Z	ELR6	DG6Z	ELR6
DG6Z	ELR6	DG6Z	ELR6
DG6Z	ELR6	DG6Z	ELR6
DG6Z	ELR6	DG6Z	ELR6
DG6Z	ELR6	DG6Z	ELR6
DG6Z	ELR6	DG6Z	ELR6
DG6Z	ELR6	DG6Z	ELR6
DG6Z	ELR6	DG6Z	SLR6
DG6Z	ELR6	DG6Z	ELR6
DG6Z	**ELR6**	**DG6Z**	**ELR6**
DG6Z	ELR6	DG6Z	ELR6
DG6Z	ELR6	DG6Z	ELR6
DG6Z	ELR6	DG6Z	SLR6
DG6Z	ELR6	DG6Z	SRL6
DG6Z	ELR6	DG6Z	SLR6
DG6Z	ELR6	DG6Z	SLR6
DG6Z	ELR6	DG6Z	SLR6
DG6Z	SLR6	DG6Z	SLR6
DG6Z	SLR6	DG6Z	SLR6
DG6Z	SLR6	DG6Z	SLR6
DG6Z	SLR6	DG6Z	SLR6
DG6Z	SLR6	DG6Z	SLR6
EG6Z	SLR6	EG6Z	SLR6
EG6Z	SLR6	EG6Z	SLR6
EG6Z	SLR6	SG6Z	SLR6
SG6Z	SLR6	SG6Z	SLR6
SG6Z	SLR6	SG6Z	SLR6
SG6Z	SLR6	–	–
SG6Z	SLR6	–	–

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Radial Double-seat Valves Type MX

The standard configuration has 6 bar air supply pressure for 10 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths							
				DN 40 / DN 50 OD 1 ½" / OD 2"		**DN 65 / DN 80 OD 2 ½" / OD 3**		**DN 100 OD 4"**		**DN 125 / DN 150 OD 6"**	
Air supply pressure [min.]		Product pressure [max.]									
bar	PSI	bar	PSI	Actuator	Lifting actuator*	Actuator	Lifting actuator*	Actuator	Lifting actuator*	Actuator	Lifting actuator
6	**87**	4	58	BD	BLMN	CF5	CLMN	CF5	CLMN	EH6	ELMN
		5	72	BD	BLMN	CF5	CLMN	CF5	CLMN	EH6	ELMN
		6	87	BD	BLMN	CF5	CLMN	CF5	CLMN	EH6	ELMN
		7	101	BD	BLMN	CF5	CLMN	CF5	CLMN	EH6	ELMN
		8	116	BD	BLMN	CF5	CLMN	CF5	CLMN	EH6	ELMN
		9	130	BD	BLMN	CF5	CLMN	CF5	CLMN	EH6	ELMN
		10	**145**	**BD**	**BLMN**	**CF5**	**CLMN**	**CF5**	**CLMN**	**EH6**	**ELMN**
5	72	4	58	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		5	72	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		6	87	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		7	101	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		8	116	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		9	130	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		10	145	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
4	58	4	58	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		5	72	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		6	87	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		7	101	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		8	116	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		9	130	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		10	145	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN

* The lifting actuator also has a supplement, depending on the nominal width.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® 24/7 PMO Valve Type M/2.0

The standard configuration has 6 bar air supply pressure for 10 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths							
				OD 1 ½" / OD 2"		**OD 2 ½" / OD 3**		**OD 4"**		**OD 6"**	
Air supply pressure [min.]		Product pressure [max.]									
bar	PSI	bar	PSI	Actuator	Lifting actuator*	Actuator	Lifting actuator*	Actuator	Lifting actuator*	Actuator	Lifting actuator
6	**87**	4	58	BD	BLMN	CF5	CLMN	CF5	CLMN	EH6	ELMN
		5	72	BD	BLMN	CF5	CLMN	CF5	CLMN	EH6	ELMN
		6	87	BD	BLMN	CF5	CLMN	CF5	CLMN	EH6	ELMN
		7	101	BD	BLMN	CF5	CLMN	CF5	CLMN	EH6	ELMN
		8	116	BD	BLMN	CF5	CLMN	CF5	CLMN	EH6	ELMN
		9	130	BD	BLMN	CF5	CLMN	CF5	CLMN	EH6	ELMN
		10	**145**	**BD**	**BLMN**	**CF5**	**CLMN**	**CF5**	**CLMN**	**EH6**	**ELMN**
5	72	4	58	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		5	72	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		6	87	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		7	101	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		8	116	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		9	130	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		10	145	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
4	58	4	58	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		5	72	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		6	87	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		7	101	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		8	116	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		9	130	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN
		10	145	BD	CLMN	DF5	DLMN	DF5	DLMN	EH6	ELMN

* The lifting actuator also has a supplement, depending on the nominal width.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Double-seat Valves Type K

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths					
				DN 25 OD 1"	**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**	**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**	**DN 100 OD 4" IPS 4"**	**DN 125**	**DN 150 OD 6" IPS 6"**
Air supply pressure [min.]		Product pressure [max.]							
bar	PSI	bar	PSI	Actuator	Actuator	Actuator	Actuator	Actuator	Actuator
8	116	4	58	AA	BB	CD	DF	EG6Z	EH6Z
		5	72	AA	BB	CD	DF	EH6Z	SK6Z
		6	87	AA	BB	DF	EG	EH6Z	SK6Z
		7	101	AA	CD	DF	EG	SK6Z	SM6Z
		8	116	AA	CD	DF	EG	SK6Z	UN6Z
		9	130	BB	CD	DF	EH	SM6Z	UN6Z
		10	145	BB	CD	EG	EH	SM6Z	–
7	101	4	58	AA	BB	CD	DF	EG6Z	EH6Z
		5	72	AA	BB	CD	DF	EH6Z	SK6Z
		6	87	AA	BB	DF	EG	SH6Z	SK6Z
		7	101	AA	CD	DF	EG	SK6Z	SM6Z
		8	116	AA	CD	DF	EG	SK6Z	UN6Z
		9	130	BB	CD	DF	RH	SM6Z	UN6Z
		10	145	BB	CD	EG	RH	UM6Z	–
6	**87**	4	58	AA	BB	CD	DF	EG6Z	SH6Z
		5	**72**	**AA**	**BB**	**CD**	**DF**	**SH6Z**	**SK6Z**
		6	87	AA	BB	DF	EG	SH6Z	SK6Z
		7	101	AA	CD	DF	EG	SK6Z	UM6Z
		8	116	AA	CD	DF	RG	SK6Z	UN6Z
		9	130	BB	CD	DF	RH	UM6Z	UN6Z
		10	145	BB	CD	EG	RH	UM6Z	–
5	72	4	58	AA	BB	CD	EF	EG6Z	SH6Z
		5	72	AA	BB	DD	EF	SH6Z	TK6Z
		6	87	AA	CB	EF	RG	SH6Z	TK6Z
		7	101	BA	CD	EF	RG	TK6Z	UM6Z
		8	116	BA	CD	EF	RG	TK6Z	–
		9	130	BB	DD	EF	SH	UM6Z	–
		10	145	BB	DD	RG	SH	UM6Z	–
4	58	4	58	BA	CB	DD	EF	SG6Z	TH6Z
		5	72	BA	CB	DD	EF	TH6Z	UK6Z
		6	87	BA	CB	EF	SG	TH6Z	UK6Z
		7	101	BA	DD	EF	SG	UK6Z	–
		8	116	BA	DD	EF	SG	UK6Z	–
		9	130	CB	DD	EF	TH	–	–
		10	145	CB	DD	SG	TH	–	–

Actuators R..., S..., T... and U... are made up of the actuator air /spring type S and booster cylinders as follows:

R...	=	actuator D	+ booster cylinder D
S...	=	actuator E	+ booster cylinder D
T...	=	actuator E	+ booster cylinder E
T...6	=	actuator E...6	+ booster cylinder E
U...6	=	actuator S...6	+ booster cylinder E

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Double-seat Valves Type C

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths					
				DN 25 OD 1"	**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**	**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**	**DN 100 OD 4" IPS 4"**	**DN 125**	**DN 150 OD 6" IPS 6"**
Air supply pressure [min.]		Product pressure [max.]							
bar	PSI	bar	PSI	Actuator	Actuator	Actuator	Actuator	Actuator	Actuator
8	116	4	58	AA	BB	CD	DF	EG6Z	EH6Z
		5	72	AA	BB	CD	DF	EH6Z	SK6Z
		6	87	AA	BB	DF	EG	EH6Z	SK6Z
		7	101	AA	CD	DF	EG	SK6Z	SM6Z
		8	116	AA	CD	DF	EG	SK6Z	UN6Z
		9	130	BB	CD	DF	EH	SM6Z	UN6Z
		10	145	BB	CD	EG	EH	SM6Z	–
7	101	4	58	AA	BB	CD	DF	EG6Z	EH6Z
		5	72	AA	BB	CD	DF	EH6Z	SK6Z
		6	87	AA	BB	DF	EG	SH6Z	SK6Z
		7	101	AA	CD	DF	EG	SK6Z	SM6Z
		8	116	AA	CD	DF	EG	SK6Z	UN6Z
		9	130	BB	CD	DF	RH	SM6Z	UN6Z
		10	145	BB	CD	EG	RH	UM6Z	–
6	**87**	4	58	AA	BB	CD	DF	EG6Z	SH6Z
		5	**72**	**AA**	**BB**	**CD**	**DF**	**SH6Z**	**SK6Z**
		6	87	AA	BB	DF	EG	SH6Z	SK6Z
		7	101	AA	CD	DF	EG	SK6Z	UM6Z
		8	116	AA	CD	DF	RG	SK6Z	UN6Z
		9	130	BB	CD	DF	RH	UM6Z	UN6Z
		10	145	BB	CD	EG	RH	UM6Z	–
5	72	4	58	AA	BB	CD	EF	EG6Z	SH6Z
		5	72	AA	BB	DD	EF	SH6Z	TK6Z
		6	87	AA	CB	EF	RG	SH6Z	TK6Z
		7	101	BA	CD	EF	RG	TK6Z	UM6Z
		8	116	BA	CD	EF	RG	TK6Z	–
		9	130	BB	DD	EF	SH	UM6Z	–
		10	145	BB	DD	RG	SH	UM6Z	–
4	58	4	58	BA	CB	DD	EF	SG6Z	TH6Z
		5	72	BA	CB	DD	EF	TH6Z	UK6Z
		6	87	BA	CB	EF	SG	TH6Z	UK6Z
		7	101	BA	DD	EF	SG	UK6Z	–
		8	116	BA	DD	EF	SG	UK6Z	–
		9	130	CB	DD	EF	TH	–	–
		10	145	CB	DD	SG	TH	–	–

Actuators R..., S..., T... and U... are made up of the actuator air /spring type S and booster cylinders as follows:

R...	=	actuator D	+ booster cylinder D
S...	=	actuator E	+ booster cylinder D
T...	=	actuator E	+ booster cylinder E
T...6	=	actuator E...6	+ booster cylinder E
U...6	=	actuator S...6	+ booster cylinder E

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Double-seat Valves Type L_H and Type L_S

The standard configuration has 6 bar air supply pressure for 7 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths		
				DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"	**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**	**DN 100 OD 4" IPS 4"**
Air supply pressure [min.]		Product pressure [max.]				
bar	PSI	bar	PSI	Actuator	Actuator	Actuator
6	**87**	4	58	CD	DF	EG
		5	72	CD	DF	EG
		6	87	CD	DF	EG
		7	**101**	**CD**	**DF**	**EG**
		8	116	CD	EG	RH
		9	130	CD	EG	RH
		10	145	CD	EG	RH

Actuators R... is made up of the actuator air /spring type S and a booster cylinder as follows:
R... = actuator D + booster cylinder D

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Double-seat Valves with Lifting Actuator Type L_HL, Type L_HC, Type L_SL and Type L_SC

The standard configuration has 6 bar air supply pressure for 7 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths					
				DN 40 / DN 50 OD 1 ½" / OD 2"		**DN 65 / DN 80 OD 2 ½" / OD 3"**		**DN 100 OD 4"**	
Air supply pressure [min.]		Product pressure [max.]							
bar	PSI	bar	PSI	Actuator	Lifting actuator*	Actuator	Lifting actuator	Actuator	Lifting actuator
6	**87**	4	58	BD	BLRN*	CF	CLT	DG	DLRN
		5	72	BD	BLRN*	CF	CLT	DG	DLRN
		6	87	BD	BLRN*	CF	CLT	DG	DLRN
		7	**101**	**BD**	**BLRN***	**CF**	**CLT**	**DG**	**DLRN**
		8	116	CF	BLRN*	DG	CLT	DH	DLRN
		9	130	CF	BLRN*	DG	CLT	DH	DLRN
		10	145	CF	BLRN*	DG	CLT	DH	DLRN

* The lifting actuator also has a supplement, depending on the nominal width.

Options – Actuator Selection VARIVENT® Actuator Air/Spring **For VARIVENT® Double-seat Divert Valves Type Y**

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths					
				DN 25 OD 1"	**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**	**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**	**DN 100 OD 4" IPS 4"**	**DN 125**	**DN 150 OD 6" IPS 6"**
Air supply pressure [min.]		Product pressure [max.]							
bar	PSI	bar	PSI	Actuator	Actuator	Actuator	Actuator	Actuator	Actuator
8	116	4	58	AA	BB	CD	DF	EG6Z	SH6Z
		5	72	AA	BB	CD	DF	SH6Z	SK6Z
		6	87	AA	BB	DF	EG	SH6Z	SK6Z
		7	101	AA	CD	DF	EG	SK6Z	UM6Z
		8	116	AA	CD	DF	EG	SK6Z	UN6Z
		9	130	BB	CD	DF	RH	UM6Z	UN6Z
		10	145	BB	CD	EG	RH	UM6Z	–
7	101	4	58	AA	BB	CD	DF	EG6Z	SH6Z
		5	72	AA	BB	DD	EF	SH6Z	SK6Z
		6	87	AA	BB	DF	EG	SH6Z	TK6Z
		7	101	AA	CD	DF	RG	TK6Z	UM6Z
		8	116	AA	CD	EF	RG	TK6Z	UN6Z
		9	130	BB	CD	EF	SH	UM6Z	UN6Z
		10	145	BB	DD	EG	SH	UM6Z	–
6	**87**	4	58	AA	CB	DD	EF	SG6Z	SH6Z
		5	**72**	**AA**	**CB**	**DD**	**EF**	**SH6Z**	**TK6Z**
		6	87	BA	CB	EF	RG	SH6Z	TK6Z
		7	101	BA	DD	EF	RG	TK6Z	UM6Z
		8	116	BA	DD	EF	RG	TK6Z	–
		9	130	CB	DD	EF	SH	UM6Z	–
		10	145	CB	DD	RG	SH	UM6Z	–
5	72	4	58	BA	CB	DD	EF	SG6Z	TH6Z
		5	72	BA	CB	DD	EF	SH6Z	UK6Z
		6	87	BA	CB	EF	SG	TH6Z	UK6Z
		7	101	BA	DD	EF	SG	UK6Z	–
		8	116	BA	DD	EF	SG	UK6Z	–
		9	130	CB	DD	EF	TH	–	–
		10	145	CB	DD	SG	TH	–	–
4	58	4	58	BA	CB	DD	RF	TG6Z	UH6Z
		5	72	BA	DB	ED	RF	UH6Z	–
		6	87	BA	DB	RF	TG	UH6Z	–
		7	101	CA	DD	RF	TG	–	–
		8	116	CA	DD	RF	TG	–	–
		9	130	CB	ED	RF	–	–	–
		10	145	DB	ED	TG	–	–	–

Actuators R..., S..., T... and U... are made up of the actuator air /spring type S and booster cylinders as follows:

R...	=	actuator D	+ booster cylinder D
S...	=	actuator E	+ booster cylinder D
T...	=	actuator E	+ booster cylinder E
T...6	=	actuator E...6	+ booster cylinder E
U...6	=	actuator S...6	+ booster cylinder E

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Double-seat Divert Valves with Lifting Actuator Type Y_L and Type Y_C

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths											
				DN 25 OD 1"		**DN 40 / DN 50 OD 1 ½" / OD 2" IPS 2"**		**DN 65 / DN 80 OD 2 ½" / OD 3" IPS 3"**		**DN 100 OD 4" IPS 4"**		**DN 125**		**DN 150 OD 6" IPS 6"**	
Air supply pressure [min.]		Product pressure [max.]													
bar	PSI	bar	PSI	Actuator	Lifting actuator*	Actuator	Lifting actuator*	Actuator	Lifting actuator*	Actuator	Lifting actuator	Actuator	Lifting actuator	Actuator	Lifting actuator
8	116	4	58	BA	BLB	BB	BLB	CD	CLB	DF	CLB	EG6Z	EL6	SH6Z	EL6
		5	72	BA	BLB	BB	BLB	CD	CLB	DF	CLB	SH6Z	EL6	SK6Z	EL6
		6	87	BA	BLB	BB	BLB	DF	CLB	EG	DLB	SH6Z	EL6	SK6Z	EL6
		7	101	BA	BLB	CD	BLB	DF	CLB	EG	DLB	SK6Z	EL6	UM6Z	EL6
		8	116	BA	BLB	CD	BLB	DF	CLB	EG	DLB	SK6Z	EL6	UN6Z	EL6
		9	130	BB	BLB	CD	BLB	DF	CLB	RH	ELB	UM6Z	EL6	UN6Z	EL6
		10	145	BB	BLB	CD	BLB	EG	DLB	RH	ELB	UM6Z	EL6	–	–
7	101	4	58	BA	BLB	BB	BLB	CD	CLB	DF	DLB	EG6Z	EL6	SH6Z	EL6
		5	72	BA	BLB	BB	BLB	DD	CLB	EF	DLB	SH6Z	EL6	SK6Z	EL6
		6	87	BA	BLB	BB	BLB	DF	DLB	EG	ELB	SH6Z	EL6	TK6Z	EL6
		7	101	BA	BLB	CD	CLB	DF	DLB	RG	ELB	TK6Z	EL6	UM6Z	SL6
		8	116	BA	BLB	CD	CLB	EF	DLB	RG	ELB	TK6Z	EL6	UN6Z	SL6
		9	130	BB	BLB	CD	CLB	EF	DLB	SH	ELB	UM6Z	SL6	UN6Z	SL6
		10	145	BB	BLB	DD	CLB	EG	ELB	SH	ELB	UM6Z	SL6	–	–
6	**87**	4	58	BA	BLB	CB	BLB	DD	CLB	EF	DLB	SG6Z	EL6	SH6Z	EL6
		5	**72**	**BA**	**BLB**	**CB**	**BLB**	**DD**	**CLB**	**EF**	**DLB**	**SH6Z**	**EL6**	**TK6Z**	**EL6**
		6	87	BA	BLB	CB	BLB	EF	DLB	RG	ELB	SH6Z	EL6	TK6Z	EL6
		7	101	BA	BLB	DD	CLB	EF	DLB	RG	ELB	TK6Z	EL6	UM6Z	SL6
		8	116	BA	BLB	DD	CLB	EF	DLB	RG	ELB	TK6Z	EL6	–	–
		9	130	CB	BLB	DD	CLB	EF	DLB	SH	ELB	UM6Z	SL6	–	–
		10	145	CB	BLB	DD	CLB	RG	ELB	SH	ELB	UM6Z	SL6	–	–
5	72	4	58	BA	BLB	CB	BLB	DD	CLB	EF	DLB	SG6Z	EL6	TH6Z	EL6
		5	72	BA	BLB	CB	BLB	DD	CLB	EF	DLB	SH6Z	EL6	UK6Z	SL6
		6	87	BA	BLB	CB	BLB	EF	DLB	SG	ELB	TH6Z	EL6	UK6Z	SL6
		7	101	BA	BLB	DD	CLB	EF	DLB	SG	ELB	UK6Z	SL6	–	–
		8	116	BA	BLB	DD	CLB	EF	DLB	SG	ELB	UK6Z	SL6	–	–
		9	130	CB	BLB	DD	CLB	EF	DLB	–	–	–	–	–	–
		10	145	CB	BLB	DD	CLB	SG	ELB	–	–	–	–	–	–
4	58	4	58	BA	BLB	CB	CLB	DD	DLB	RF	ELB	TG6Z	EL6	UH6Z	SL6
		5	72	BA	BLB	DB	CLB	ED	DLB	RF	ELB	UH6Z	SL6	–	–
		6	87	BA	BLB	DB	CLB	RF	ELB	–	–	UH6Z	SL6	–	–
		7	101	CA	BLB	–	–	RF	ELB	–	–	–	–	–	–
		8	116	CA	BLB	–	–	RF	ELB	–	–	–	–	–	–
		9	130	CB	C LB	–	–	RF	ELB	–	–	–	–	–	–
		10	145	DB	CLB	–	–	–	–	–	–	–	–	–	–

* The lifting actuator also has a supplement, depending on the nominal width.

Actuators R..., S..., T... and U... are made up of the actuator air /spring type S and booster cylinders as follows:

R...	=	actuator D	+ booster cylinder D
S...	=	actuator E	+ booster cylinder D
T...6	=	actuator E...6	+ booster cylinder E
U...6	=	actuator S...6	+ booster cylinder E

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

For a detailed description of the composition of actuator / booster cylinders, please refer to the VARIVENT® booster cylinder page on the actuator air / spring.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Flow Diversion Device Type X_R

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths			
				OD 1"	**OD 1 ½" / OD 2"**	**OD 2 ½" / OD 3"**	**OD 4"**
Air supply pressure [min.]		Product pressure [max.]					
bar	PSI	bar	PSI	Actuator	Actuator	Actuator	Actuator
8	116	4	58	Z/FDD CB	Z/FDD CB	Z/FDD DD	Z/FDD EF
		5	72	Z/FDD CB	Z/FDD CB	Z/FDD DD	Z/FDD EF
		6	87	Z/FDD CB	Z/FDD CB	Z/FDD EF	Z/FDD EH
		7	101	Z/FDD CB	Z/FDD DD	Z/FDD EF	Z/FDD EH
		8	116	Z/FDD CB	Z/FDD DD	Z/FDD EF	Z/FDD EH
		9	130	Z/FDD CB	Z/FDD DD	Z/FDD EF	–
		10	145	Z/FDD CB	Z/FDD DD	Z/FDD EH	–
7	101	4	58	Z/FDD CB	Z/FDD CB	Z/FDD DD	Z/FDD EF
		5	72	Z/FDD CB	Z/FDD CB	Z/FDD DD	Z/FDD EF
		6	87	Z/FDD CB	Z/FDD CB	Z/FDD EF	Z/FDD EH
		7	101	Z/FDD CB	Z/FDD DD	Z/FDD EF	–
		8	116	Z/FDD CB	Z/FDD DD	Z/FDD EF	–
		9	130	Z/FDD CB	Z/FDD DD	Z/FDD EF	–
		10	145	Z/FDD CB	Z/FDD DD	Z/FDD EH	–
6	**87**	4	58	Z/FDD CB	Z/FDD CB	Z/FDD DD	Z/FDD EF
		5	**72**	**Z/FDD CB**	**Z/FDD CB**	**Z/FDD DD**	**Z/FDD EF**
		6	87	Z/FDD CB	Z/FDD CB	Z/FDD EF	–
		7	101	Z/FDD CB	Z/FDD DD	Z/FDD EF	–
		8	116	Z/FDD CB	Z/FDD DD	Z/FDD EF	–
		9	130	Z/FDD CB	Z/FDD DD	Z/FDD EF	–
		10	145	Z/FDD CB	Z/FDD DD	-	–
5	72	4	58	Z/FDD CB	Z/FDD CB	Z/FDD DD	Z/FDD EF
		5	72	Z/FDD CB	Z/FDD CB	Z/FDD DD	Z/FDD EF
		6	87	Z/FDD CB	Z/FDD CB	Z/FDD EF	–
		7	101	Z/FDD CB	Z/FDD DD	Z/FDD EF	–
		8	116	Z/FDD CB	Z/FDD DD	Z/FDD EF	–
		9	130	Z/FDD CB	Z/FDD DD	Z/FDD EF	–
		10	145	Z/FDD CB	Z/FDD DD	–	–
4	58	4	58	Z/FDD CB	Z/FDD CB	Z/FDD DD	–
		5	72	Z/FDD CB	Z/FDD DD	Z/FDD EF	–
		6	87	Z/FDD CB	Z/FDD DD	–	–
		7	101	Z/FDD CB	Z/FDD DD	–	–
		8	116	Z/FDD CB	Z/FDD DD	–	–
		9	130	Z/FDD CB	Z/FDD EF	–	–
		10	145	Z/FDD DD	Z/FDD EF	–	–

* The lifting actuator also has a supplement, depending on the nominal width.

If there are different product pressures in the valve housings, this can result in different actuator sizes which cannot be found in the table. Please contact us in this case.

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Double-seat Bottom Valves Type T_R

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths						
				**DN 40 OD 1 ½" **	**DN 50 OD 2" IPS 2"**	**DN 65 OD 2 ½"**	**DN 80 OD 3" IPS 3"**	**DN 100 OD 4" IPS 4"**	**DN 125**	**DN 150 OD 6" IPS 6"**
Air supply pressure [min.]		Product pressure [max.]								
bar	PSI	bar	PSI	Actuator	Actuator	Actuator	Actuator	Actuator	Actuator	Actuator
6	**87**	4	58	CD	CD	DF	DF5	EG5	SH6Z	SK6Z
		5	**72**	**CD**	**CD**	**DF**	**DF5**	**EG5**	**SH6Z**	**SK6Z**
		6	87	–	–	–	–	–	–	–
		7	101	–	–	–	–	–	–	–
		8	116	–	–	–	–	–	–	–
		9	130	–	–	–	–	–	–	–
		10	145	–	–	–	–	–	–	–
5	72	4	58	CD	CD	DF	EF5	EG5	SH6Z	SK6Z
		5	72	CD	CD	DF	EF5	EG5	SH6Z	SK6Z
		6	87	–	–	–	–	–	–	–
		7	101	–	–	–	–	–	–	–
		8	116	–	–	–	–	–	–	–
		9	130	–	–	–	–	–	–	–
		10	145	–	–	–	–	–	–	–
4	58	4	58	DD	DD	EF	EF5	SG5	UK6	UK6
		5	72	DD	DD	EF	EF5	SG5	UK6	UK6
		6	87	–	–	–	–	–	–	–
		7	101	–	–	–	–	–	–	–
		8	116	–	–	–	–	–	–	–
		9	130	–	–	–	–	–	–	–
		10	145	–	–	–	–	–	–	–

Options – Actuator Selection
VARIVENT® Actuator Air/Spring
For VARIVENT® Double-seat Bottom Valves with Lifting Actuator Type T_RL and Type T_RC

The standard configuration has 6 bar air supply pressure for 5 bar product pressure (see grey mark in the table). The particular product and air supply pressure must be specified when ordering. If you do not provide any further information about the pressures when ordering, we will supply the standard configuration.

				Nominal widths											
				DN 25*/ DN 40/DN 50 OD 1"*/ OD 1 ½" /OD 2" IPS 2		**DN 65 OD 2 ½"**		**DN 80 OD 3" IPS 3"**		**DN 100 OD 4" IPS 4"**		**DN 125**		**DN 150 OD 6" IPS 6"**	
Air supply pressure [min.]		Product pressure [max.]													
bar	PSI	bar	PSI	Actuator	Lifting actuator**	Actuator	Lifting actuator	Actuator	Lifting actuator	Actuator	Lifting actuator	Actuator	Lifting actuator	Actuator	Lifting actuator
6	**87**	4	58	BD	BLR	CF	CLT	CF5	DLT5	DG5	DLT5	EH6Z	ELR6	EK6Z	ELR6
		5	**72**	**BD**	**BLR**	**CF**	**CLT**	**CF5**	**DLT5**	**DG5**	**DLT5**	**EH6Z**	**ELR6**	**EK6Z**	**ELR6**
		6	87	–	–	–	–	–	–	–	–	–	–	–	–
		7	101	–	–	–	–	–	–	–	–	–	–	–	–
		8	116	–	–	–	–	–	–	–	–	–	–	–	–
		9	130	–	–	–	–	–	–	–	–	–	–	–	–
		10	145	–	–	–	–	–	–	–	–	–	–	–	–
5	72	4	58	BD	BLR	CF	CLT	CF5	DLT5	DG5	DLT5	EH6Z	ELR6	EK6Z	ELR6
		5	72	BD	BLR	CF	CLT	CF5	DLT5	DG5	DLT5	EH6Z	ELR6	EK6Z	ELR6
		6	87	–	–	–	–	–	–	–	–	–	–	–	–
		7	101	–	–	–	–	–	–	–	–	–	–	–	–
		8	116	–	–	–	–	–	–	–	–	–	–	–	–
		9	130	–	–	–	–	–	–	–	–	–	–	–	–
		10	145	–	–	–	–	–	–	–	–	–	–	–	–
4	58	4	58	BD	CLR	CF	CLT	CF5	DLT5	DG5	ELR5	EH6Z	ELR6	EK6Z	SLR6
		5	72	BD	CLR	CF	CLT	CF5	DLT5	DG5	ELR5	EH6Z	ELR6	EK6Z	SLR6
		6	87	–	–	–	–	–	–	–	–	–	–	–	–
		7	101	–	–	–	–	–	–	–	–	–	–	–	–
		8	116	–	–	–	–	–	–	–	–	–	–	–	–
		9	130	–	–	–	–	–	–	–	–	–	–	–	–
		10	145	–	–	–	–	–	–	–	–	–	–	–	–

* The nominal widths DN 25 and OD 1" are available as double-seat bottom valve with lift function without spray cleaning.
** The lifting actuator also has a supplement, depending on the nominal width e.g. DN 25: BLR25



GEA Valve Automation – Control and Feedback Systems

Valve automation for increased process reliability, efficiency and flexibility

GEA's hygienic valve technology sets the standards for reliable, safe and permanently efficient liquid processes. Leading-edge control and automation options enable operators to achieve optimum control and monitoring of the valve – thereby realizing state-of-the-art, highly flexible operating and automation concepts.

The key component is the latest generation of GEA control tops with reliable, ground-breaking control and feedback technology. Mechanical valve components and a control top specified for the particular application together form a finely tuned valve unit capable of realizing advanced system concepts and enhancing process options.

The control top – integral part of the valve unit

The control top facilitates optimized production and cleaning processes with less expenditure on staff, energy and time. Valve functions can be automatically and continuously monitored, recorded, evaluated and if necessary, corrected. Detectable valve positions make a crucial contribution towards the achievement of optimum system operation. This ensures adherence to a smooth process flow, while also achieving the utmost in product safety.

Special priority is given to sustainability in intelligent valve control: Thanks to the selectable LEFF® function integrated in the T.VIS® A-15, up to 90 percent of cleaning agents can be saved by an optimized and PLC-independent pulsing of the valve discs during the cleaning process. The economical air guidance in the control top and the integrated solenoid valves with low power intake minimize energy consumption as well as the demand for compressed air and the number of hose connections.

In addition, the control top offers the best protection to components against 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 to make future-oriented, pioneering automation functions possible. For example, users can ensure early digital integration of their system control setup in Industry 4.0 environments by way of the modern IO-Link technology. Digital exchange of data enables central setting of component parameters and lossless information transfer.

Diagnostic data from the valve can be processed and displayed in central control unit of the plant. The options even extend to networking the system controller with the company's ERP system for optimized resource utilization.

Easy start-up
Thanks to pre-configurable system parameters and a fully automatic SETUP, the installation for digital valve control is easy even also without extensive technical knowledge. Regional requirements, application-specific certificates (UL/CSA/PMO/ATEX) and other individual specifications can be provided as needed.

As a true pioneer with decades of experience in the development of valves and control tops for all processes, GEA offers the perfect symbiosis of mechanical and electronic engineering, largely with standardized components. Extensive tests and countless valve units installed around the world have continuously proved the reliability and cost-effectiveness for the user, always ensuring maximum safety of operation.

Recommended control and feedback systems for GEA VARIVENT® seat valves
The T.VIS® M-20 offers an attractively priced basic version of control and feedback technology for seat valves with optimum adaptation to process conditions. The T.VIS® M-20 is fitted with self-learning sensors and is available for all established types of communication such as 24VDC, As-i and DeviceNet.

The T.VIS® A-15 offers extended functional scope and greater ease of operation. Besides the established types of communication, this control top also features the groundbreaking IO-Link technology, which allows users to set the parameters for components centrally in the system via digital data exchange and transfer all process data loss-free. Thanks to a fully automatic setup, commissioning can be quickly and easily carried out by means of the push buttons fitted on the hood. Additional functions such as the selection of different tolerance bands, signal attenuation and the resource-saving LEFF® function round off the T.VIS® A-15.

Especially for GEA VARIVENT® mixproof valves, the T.VIS® A-15 provides the optimum solution, guaranteeing efficient processes and lower operating costs.

For control applications the T.VIS® P-15 positioner combination with an air-spring actuator provides a cost-efficient alternative to conventional control valves with diaphragm actuators. The valve can be moved to any position.

Attention must be paid to regional requirements for use in explosive areas. The SES meets the requirements of the European ATEX Directive and can be used in Zones 1 and 20. The T.VIS® A-15 is certified in accordance with the Directive Class 1 / Div. 2 in compliance with the regulations in place for the North American market.

Sample Composition of the Order Code

Procedure for valve selection (positions 1 – 13), incl. a feedback system

Position		Description of the order code for the standard version					
1		**Valve type**					
		D	VARIVENT® double-seat valve				
2		**Housing combinations**					
		A B	C	E			
3		**Supplement to the valve type**					
		L	With lifting actuator and spray cleaning				
		C	With lifting actuator without spray cleaning				
4/5		**Nominal width (upper housing / lower housing)**					
		DN 25	OD 1"				
		DN 40	OD 1 ½"				
		DN 50	OD 2"	IPS 2"			
		DN 65	OD 2 ½"				
		DN 80	OD 3"	IPS 3"			
		DN 100	OD 4"	IPS 4"			
		DN 125					
		DN 150	OD 6"	IPS 6"			
6		**Actuator type**					
		S	Air / Spring				
7		**Air connection**					
		Z	Spring-to-close (NC)				
8		**Standard configuration with 6 bar supply air pressure for 5 bar product pressure**					
		Actuator (spring-to-close)	**/ Lifting actuator**	**For nominal widths**			
		BA	/ BLB	DN 25, OD 1"			
		BB	/ BLB	DN 40, DN 50, OD 1 ½", OD 2", IPS 2"			
		CD	**/ CLB**	DN 65, DN 80, OD 2 ½", OD 3", IPS 3"			
		DF	/ DLB	DN 100, OD 4", IPS 4"			
		SH6	/ EL6	DN 125			
		SK6	/ EL6	DN 150, OD 6", IPS 6"			
9		**Valve seat version**		Housing combination			
				A	B	C	E
		L0	Loose seat ring / Clamp connection	•	•	•	•
		V1	Welded seat ring / Port orientation 90°	•	•	•	•
		V2	Welded seat ring / Port orientation 180°	•	•	•	•
		V3	Welded seat ring / Port orientation 270°		•		
10		**Seal material in contact with the product**					
		1	EPDM (FDA)				
		2	FKM (FDA)				
		3	HNBR (FDA); (up to DN 100, OD 4")				
11		**Surface quality of the housing**					
		2	Inside $R_a \leq 0.8$ µm, outside matt blasted				
12		**Connection fittings**					
		N	Welding end				
13		**Accessories**					
		/52	Adhesive ID tag				

Procedure for feedback system selection (positions 14 – 19)

Position		Description of the order code	
14		**Feedback location**	
	🔍	TM20	Control top T.VIS® M-20
15		**Control top type**	
		N	Without solenoid valve
		P	1 solenoid valve Y1
		R	1 solenoid valve Y1 (retrofittable: Y2, Y3)
		I	2 solenoid valves Y1, Y2 (retrofittable: Y3)
		J	2 solenoid valves Y1, Y3 (retrofittable: Y2)
	🔍	L	3 solenoid valves Y1, Y2, Y3
		V	1 solenoid valve Y1 (retrofittable: Y2, Y3), logic NOT-element
		X	2 solenoid valves Y1, Y2 (retrofittable: Y3), logic NOT-element
		Y	3 solenoid valves Y1, Y2, Y3, logic NOT-element
16		**Feedback**	
	🔍	2	2 feedbacks
		3	2 feedbacks with external proximity switch
17		**Type of interface**	
		B	24 V DC, 3-wire, PNP
	🔍	N	24 V DC, 3-wire, NPN
		C	48–130 V AC
18		**Solenoid valve**	
	🔍	A	24 V DC, 0.85 W
		0	Without
19		**Screw connection**	
	🔍	M	Metric air connection, M20×1.5 cable gland
		Z	Inch air connection, 0.5" NPT cable gland
		J	Metric air connection, 5-pin M12 plug (1 solenoid valve, 2 feedbacks)
		P	Inch air connection, 5-pin M12 plug (1 solenoid valve, 2 feedbacks)
		H	Metric air connection, 8-pin M12 plug (> 1 solenoid valve, > 2 feedbacks)
		I	Inch air connection, 8-pin M12 plug (> 1 solenoid valve, > 2 feedbacks)
		B	Inch air connection, Brad Harrison 0.5" NPT 5-pin plug (US)
		Options (multiple selection possible)	
		/18	Supply air throttle: regulates the opening speed of the valve
		/19	Exhaust air throttle: regulates the closing speed of the valve
		/22	5-pin M12 connection socket for screw fitting J, P (article no. 508-963) 8-pin M12 connection socket for screw fitting H, I (article no. 508-061)
		/59	Clamp joint 1.4401 at the control top
		/66	Protection class IP66
		/67	Protection class IP67
		/UC	Certification UL / CSA

Example for a complete order code, comprising valve and feedback system:

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code	D	E 🔍	L 🔍	-	DN 65/DN 65 🔍	-	S	Z	-	CD/CLB 🔍	-	L0 🔍	-	1 🔍	2 🔍	N	/52	+	TM20	L 🔍	2 🔍	B 🔍	A 🔍	M 🔍

Complete Order Codes

Shut-off Valves

The complete order code makes it possible to assemble an order code for a non-standard configuration. All possible options for the valve in question are included.

When ordering a valve, specify not only the order code but also any required connection fittings as well as the supply air and product pressure. Unless specific pressure values are stated, the actuators for valves will be configured for 6 bar air supply pressure and 5 bar product pressure.

Position	Description of the order code				Available for valve type		
					N	N/ECO	U
1	**Valve type**						
	N	VARIVENT® shut-off valve					
	N	ECOVENT® shut-off valve					
	U	VARIVENT® shut-off valve					
2	**Housing combinations**						
	L	T			•	•	
	F[1]	D[1]					•
	A	B	C	E	•	•	•
	I[12]					•	
3	**Supplement to the valve type**						
	/ ECO	ECOVENT® shut-off valve				•	
	/M/ ECO[2]	ECOVENT® shut-off valve with stainless steel bellow				•	
	R	Radial sealing					•
	V	Long-stroke valve			•[3]		•[4]
	V/ECO	Long-stroke valve				•	
	A / S	Bellow, stainless steel			•[5]		
	A / P	Bellow, PTFE			•[5]		
4/5	**Nominal width (upper housing / lower housing)**						
	DN 10, DN 15					•	
	DN 25, DN 40, DN 50, DN 65, DN 80, DN 100				•	•	•
	DN 125, DN 150				•		•
	OD 1", OD 1 ½", OD 2", OD 2 ½", OD 3", OD 4"				•	•	•
	OD 6"				•		•
	IPS 2", IPS 3", IPS 4", IPS 6"				•		•
6	**Actuator type**						
	S	VARIVENT® actuator air / spring			•		•
	E	ECOVENT® actuator air / spring				•	
	Z	VARIVENT® actuator air / spring, air-assisted			•		•
	J	VARIVENT® actuator air / air			•		•
	G	VARIVENT® manual actuator, locked with thread			•		•
	H	ECOVENT® manual actuator				•[2]	
	H	Hydraulic for VARIVENT®			•		
	L	VARIVENT® long-stroke actuator air / spring			•[3]		•[4]
7	**Non-actuated position**						
	Z	Spring-to-close (NC)			•	•	•
	A	Spring-to-open (NO)			•	•	•
	–[6]	Indifferent			•		•
8	**Actuator**						
	The size of the actuator or actuator-combination depends on the valve type and size, the air supply and product pressure as well as the closing direction of the valve. This information must be specified in the order. Section 8 contains configuration tables.						

[1] With housing connection flange U or U-S [2] Only for DN 10 or DN 15 [3] Only for DN 65–DN 100 and OD 2½"–OD 4" [4] Only for DN 80–DN 100 and OD 3"–OD 4"
[5] Only for DN 25–DN 100 and OD 1"–OD 4" [6] If the VARVENT® actuator air/air or manual actuator is selected [12] Only for OD 2½"–OD 4"

Position	Description of the order code		Housing combination									Available for valve type		
			A	B	C	E	L	T	F	D	I	N	N/ECO	U
9	**Valve seat version**													
	L0	Loose seat ring / Clamp connection	•	•	•	•	•	•	•	•	•[7]	•	•	•[8]
	V0	Fixed vertical port					•	•				•	•[10]	
	V0	Welded seat ring / Port orientation 0°	•	•	•	•						•	•	•
	V1	Welded seat ring / Port orientation 90°	•	•	•	•						•	•	•
	V2	Welded seat ring / Port orientation 180°		•								•	•	•
	V3	Welded seat ring / Port orientation 270°		•								•	•	•
10	**Seal material**													
	1	EPDM (FDA)										•	•	•
	2	FKM (FDA)										•	•	•
	3	HNBR (FDA); (up to DN 100, OD 4")										•	•	•
	4	FFKM										•	•[9]	•[11]
11	**Surface quality of the housing**													
	2	Inside R_a ≤ 0.8 µm, outside matt										•	•[9]	•
	3	Inside R_a ≤ 0.8 µm, outside ground										•	•	•
	4	Inside R_a ≤ 0.4 µm, outside matt										•	•[9]	•
	8	Inside R_a ≤ 0.4 µm, outside ground										•	•	•
12	**Connection fittings**													
	N	Welding end										•	•	•
	J	With connection fitting (please specify separately in each case)										•	•	•
		TK VARIVENT® flange connection complete, groove flange on housing										•	•[9]	•
		TN VARIVENT® groove flange cpl., incl. O-ring and connecting parts										•	•[9]	•
		TF VARIVENT® flange										•	•[9]	•
		GK Pipe fitting S complete, male end on housing										•	•	•
		KO Liner including groove nut SD										•	•	•
		GO Male end SC including seal ring G										•	•	•
		ASK Hygienic flange connection complete, groove flange on housing										•	•[9]	•
		NFK Hygienic-groove flange complete, incl. O-ring and connecting parts										•	•[9]	•
		BFK Hygienic flange										•	•[9]	•
		CO Clamp connection										•	•	•

[7] Only for ECOVENT® Angle valve type NI/ECO [8] Not possible with housing combination L or T [9] Not for DN 10 or DN 15 [10] Standard for DN 10 or DN 15
[11] Not for radial sealing valves

Complete Order Codes

Shut-off Valves

Position	Description of the order code		Available for valve type		
13	**Accessories**		**N**	**N/ECO**	**U**
	/07	TEFASEP® gold (FDA)	•[5]		
	/12	Damping cylinder	•		•
	/16	Two-position-stop	•[12]		•[13]
	/16	Two-position-stop for T.VIS®	•		•
	/20	Limit-stop opening	•		•
	/21	Limit-stop closing	•		•
	/24	Sterile lock complete	•		•
	/25	Jacketed valve housings	•[5]	•	•[5]
	/28	Lower housing port suitable for orbital welding	•	•	
	/37	PS 20 bar	•		•
	/38	PS 16 bar (jacketed valve housing)	•		•
	/37	PS 25 bar		•[2]	
	/41	Test report 2.2	•	•	•
	/42	Inspection certificate 3.1 acc. to EN 10204	•	•	•
	/P	Welded seam ground + Electrolytically polished	•	•	•
	/S	Welded seam ground	•	•	•
	/E	Electrolytically polished	•	•	•
	/EX	Ex-proof design	•	•	•
	/50	Engraved metal plate (TAG-No.)	•	•	•
	/51	Metal plate	•	•	•
	/52	Adhesive ID tag	•	•	•
	/3A	Adhesive ID tag, version of the valve acc. to 3-A standard	•	•	•
	/TL	Housing tangential left	•	•	•
	/TR	Housing tangential right	•	•	•
	/TT	Housing tangential straight	•	•	•
+					
14–19	**Control and feedback system**				
	00000M	Without control and feedback system with air connection metric for air hose Ø 6 / 4 mm			
	00000Z	Without control and feedback system with air connection inch for air hose Ø OD ¼" (6.35 / 4.35 mm)			
	HYD-I	Hydract® feedback system			
	The description of the order code for valves with control and feedback system is contained in the catalog GEA Valve Automation.				

[2] Only for DN 10 or DN 15 [5] Only for DN 25–DN 100 and OD 1"–OD 4" [12] Non-activated position: Spring-to-close (NC) [13] Non-activated position: Spring-to-open (NO)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code				-	/	-			-		-		-					+						

Complete Order Codes

Divert Valves

The complete order code makes it possible to assemble an order code for a non-standard configuration. All possible options for the valve in question are included.

When ordering a valve, specify not only the order code but also any required connection fittings as well as the supply air and product pressure. Unless specific pressure values are stated, the actuators for valves will be configured for 6 bar air supply pressure and 5 bar product pressure.

Position	Description of the order code								Available for valve type		
									W	W/ECO	X
1	**Valve type**										
	W	VARIVENT® divert valve									
	W	ECOVENT® divert valve (always with /ECO at position 3)									
	X	VARIVENT® divert valve									
2	**Housing combinations**										
	K	P	V	O					•	•	•[1]
	W	U	X	Y	Z	M	N	G	•	•	•
3	**Supplement to the valve type**										
	/ ECO	ECOVENT® divert valve								•	
	R	Radial sealing							•		•
	V	Long-stroke							•[2]		•[3]
4/5	**Nominal width (upper housing / lower housing)**										
	DN 10, DN 15									•	
	DN 25, DN 40, DN 50, DN 65, DN 80, DN 100								•	•	•
	DN 125, DN 150								•		•
	OD 1", OD 1 ½", OD 2", OD 2 ½", OD 3", OD 4"								•	•	•
	OD 6"								•		•
	IPS 2", IPS 3", IPS 4", IPS 6"								•		•
6	**Actuator type**										
	S	VARIVENT® actuator air / spring							•		•
	E	ECOVENT® actuator air / spring								•	
	Z	VARIVENT® actuator air / spring, air-assisted							•		•
	J	VARIVENT® actuator air / air							•		•
	G	VARIVENT® manual actuator, locked with thread							•		•
	H	ECOVENT® manual actuator								•[4]	
	H	Hydraulic for VARIVENT®							•		
	L	VARIVENT® long-stroke actuator air / spring							•[2]		•[3]
7	**Non-actuated position**										
	Z	Spring-to-close (NC)							•	•	•
	A	Spring-to-open (NO)							•	•	•
	– [5]	Indifferent							•		•
8	**Actuator**										
	The size of the actuator or actuator-combination depends on the valve type and size, the air supply and product pressure as well as the closing direction of the valve. This information must be specified in the order. Section 8 contains configuration tables.										

[1] Only for radial sealing valves [2] Only for DN 65–DN 100 and OD 2½"–OD 4" [3] Only for OD 2½"–OD 4" [4] Only for DN 10 or DN 15
[5] If the VARVENT® actuator air/air or manual actuator is selected

Position	Description of the order code			Housing combination											Available for valve type		
				K	P	V	O	W	U	X	Y	Z	M	N	G	W	W/ECO	X
9	**Valve seat version**																	
	L0	Loose seat ring / Clamp connection		•	•	•	•									•	•	•
	L00	Loose seat ring / Clamp connection						•	•	•	•	•	•	•	•	•	•	•
	V0	Port orientation 0° / Fixed vertical port		•	•	•	•									•	•	
	V1	Port orientation 90° / Fixed vertical port		•	•	•	•									•	•	
	V2	Port orientation 180° / Fixed vertical port		•	•	•	•									•	•	
	V3	Port orientation 270° / Fixed vertical port		•	•	•	•									•	•	
	V00	Welded seat ring upper Port orientation 0° / lower Port orientation 0°		•	•	•	•	•	•	•	•	•	•	•	•	•[1]		•[1]
	V01	Welded seat ring upper Port orientation 0° / lower Port orientation 90°						•	•	•	•	•	•	•	•	•[1]		•[1]
	V02	Welded seat ring upper Port orientation 0° / lower Port orientation 180°						•	•	•	•	•	•	•	•	•[1]		•[1]
	V03	Welded seat ring upper Port orientation 0° / lower Port orientation 270°						•	•	•	•	•	•	•	•	•[1]		•[1]
	V10	Welded seat ring upper Port orientation 90° / lower Port orientation 0°		•	•	•	•	•	•	•	•	•	•	•	•	•[1]		•[1]
	V11	Welded seat ring upper Port orientation 90° / lower Port orientation 90°						•	•	•	•	•	•	•	•	•[1]		•[1]
	V12	Welded seat ring upper Port orientation 90° / lower Port orientation 180°						•	•	•	•	•	•	•	•	•[1]		•[1]
	V13	Welded seat ring upper Port orientation 90° / lower Port orientation 270°						•	•	•	•	•	•	•	•	•[1]		•[1]
	V20	Welded seat ring upper Port orientation 180° / lower Port orientation 0°		•	•	•	•	•	•	•	•	•	•	•	•	•[1]		•[1]
	V21	Welded seat ring upper Port orientation 180° / lower Port orientation 0°						•	•	•	•	•	•	•	•	•[1]		•[1]
	V22	Welded seat ring upper Port orientation 180° / lower Port orientation 180°						•	•	•	•	•	•	•	•	•[1]		•[1]
	V23	Welded seat ring upper Port orientation 180° / lower Port orientation 270°						•	•	•	•	•	•	•	•	•[1]		•[1]
	V30	Welded seat ring upper Port orientation 270° / lower Port orientation 0°		•	•	•	•	•	•	•	•	•	•	•	•	•[1]		•[1]
	V31	Welded seat ring upper Port orientation 270° / lower Port orientation 90°						•	•	•	•	•	•	•	•	•[1]		•[1]
	V32	Welded seat ring upper Port orientation 270° / lower Port orientation 180°						•	•	•	•	•	•	•	•	•[1]		•[1]
	V33	Welded seat ring upper Port orientation 270° / lower Port orientation 270°						•	•	•	•	•	•	•	•	•[1]		•[1]
10	**Seal material**																	
	1	EPDM (FDA)														•	•	•
	2	FKM (FDA)														•	•	•
	3	HNBR (FDA); (up to DN 100, OD 4")														•	•	•
	4	FFKM														•[7]	•[6]	•[7]
11	**Surface quality of the housing**																	
	2	Inside $R_a \leq 0.8$ µm, outside matt														•	•[6]	•
	3	Inside $R_a \leq 0.8$ µm, outside ground														•	•	•
	4	Inside $R_a \leq 0.4$ µm, outside matt														•	•[6]	•
	8	Inside $R_a \leq 0.4$ µm, outside ground														•	•	•
12	**Connection fittings**																	
	N	Welding end														•	•	•
	J	With connection fitting (please specify separately in each case)														•	•	•
		TK	VARIVENT® flange connection complete, groove flange on housing													•	•[6]	•
		TN	VARIVENT® groove flange cpl., incl. O-ring and connecting parts													•	•[6]	•
		TF	VARIVENT® flange													•	•[6]	•
		GK	Pipe fitting S complete, male end on housing													•	•	•
		KO	Liner including groove nut SD													•	•	•
		GO	Male end SC including seal ring G													•	•	•
		ASK	Hygienic flange connection complete, groove flange on housing													•	•[6]	•
		NFK	Hygienic-groove flange complete, incl. O-ring and connecting parts													•	•[6]	•
		BFK	Hygienic flange													•	•[6]	•
		CO	Clamp connection													•	•	•

[1] Only for radial sealing valves [6] Not for DN 10 or DN 15 [7] Not for radial sealing valves

Complete Order Codes

Divert Valves

Position	Description of the order code		Available for valve type		
13	**Accessories**		**W**	**W/ECO**	**X**
	/07	TEFASEP® gold (FDA)	•[8]		
	/12	Damping cylinder	•		•
	/16	Two-position-stop	•[9]		•[10]
	/16	Two-position-stop for T.VIS®	•		•
	/20	Limit-stop opening	•		•
	/21	Limit-stop closing	•		•
	/24	Sterile lock complete	•		•
	/25	Jacketed valve housings	•[8]	•	•[8]
	/28	Lower housing port suitable for orbital welding	•	•	
	/37	PS 20 bar	•		•
	/38	PS 16 bar (jacketed valve housing)	•		•
	/39	PS 25 bar		•[4]	
	/41	Test report 2.2	•	•	•
	/42	Inspection certificate 3.1 acc. to EN 10204	•	•	•
	/P	Welded seam ground + Electrolytically polished	•	•	•
	/S	Welded seam ground	•	•	•
	/E	Electrolytically polished	•	•	•
	/EX	Ex-proof design	•	•	•
	/50	Engraved metal plate (TAG-No.)	•	•	•
	/51	Metal plate	•	•	•
	/52	Adhesive ID tag	•	•	•
	/3A	Adhesive ID tag, version of the valve acc. to 3-A standard	•	•	•
+					
14–19	**Control and feedback system**				
	00000M	Without control and feedback system with air connection metric for air hose Ø 6 / 4 mm			
	00000Z	Without control and feedback system with air connection inch for air hose Ø OD ¼" (6.35 / 4.35 mm)			
	HYD-I	Hydract® feedback system			
	The description of the order code for valves with control and feedback system is contained in the catalog GEA Valve Automation.				

[4] Only for DN 10 or DN 15 [8] Only for DN 25–DN 100 and OD 1"–OD 4" [9] Non-activated position: Spring-to-close (NC) [10] Non-activated position: Spring-to-open (NO)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code				-	/	-			-		-		-					+						

Complete Order Codes

Mixproof Shut-off Valves

The complete order code makes it possible to assemble an order code for a non-standard configuration. All possible options for the valve in question are included.

When ordering a valve, specify not only the order code but also any required connection fittings as well as the air supply and product pressure. Unless specific pressure values are stated, the actuators for valves will be configured for 6 bar air supply pressure and 5 bar product pressure.

Position	Description of the order code			Available for valve type					
				D	B	R	MX	M/ 2.0	M_C/ 2.0
1	**Valve type**								
	D	VARIVENT® double-seat valve							
	B	VARIVENT® double-seat valve with balancer							
	R	VARIVENT® radial sealing double-seat valve							
	MX	VARIVENT® radial sealing double-seat valve							
	M/2.0	VARIVENT® double-seal valve							
	M_C/2.0	VARIVENT® double-seat valve							
2	**Housing combinations**								
	A	B	C	•	•	•	•	•	
	E			•	•	•	•	•	•
3	**Supplement to the valve type**								
		Spray cleaning		•	•	•			
	L	Lifting actuator and spray cleaning		•	•	•			
	C	Lifting actuator without spray cleaning		•	•	•			
	L/V	Long stroke with lifting actuator and spray cleaning		•[1]					
	C/V	Long stroke with lifting actuator without spray cleaning		•[1]					
	O	Lifting actuator double balanced, without spray cleaning					•	•	
	C/CC	Lifting actuator without spray cleaning, only lower balancer							•
	O/CC	Lifting actuator without spray cleaning, double balanced							•
	S	With divisible actuator						•	
4/5	**Nominal width (upper housing / lower housing)**								
	DN 25			•		•			
	DN 40, DN 50			•		•	•		
	DN 65, DN 80, DN 100			•	•	•	•		
	DN 125, DN 150			•	•	•	•		
	OD 1"			•		•	•		
	OD 1 ½", OD 2"			•		•	•	•	See order code
	OD 2 ½", OD 3", OD 4"			•	•	•	•	•	
	OD 6"			•	•	•	•	•	
	IPS 2", IPS 3", IPS 4", IPS 6"			•	•	•			
6	**Actuator type**								
	S	VARIVENT® actuator air / spring		•	•	•	•	•	•
	H	Hydraulic for VARIVENT®		•		•			
7	**Non-actuated position**								
	Z	Spring-to-close (NC)		•	•	•	•	•	•
8	**Actuator**								
	The size of the actuator or actuator-combination depends on the valve type and size, the air supply and product pressure as well as the closing direction of the valve. This information must be specified in the order. Section 8 contains configuration tables.								

[1] Only for OD 3"–OD 4"

Position	Description of the order code			Housing combination				Available for valve type					
				A	B	C	E	D	B	R	MX	M/ 2.0	M_C/ 2.0
9	**Valve seat version**												
	L0	Loose seat ring / Clamp connection		•	•	•	•	•	•	•			
	V0	Welded seat ring / Port orientation 0°		•	•	•	•	•	•	•			
	V1	Welded seat ring / Port orientation 90°		•	•	•	•	•	•	•	•	•	•
	V2	Welded seat ring / Port orientation 180°			•			•	•	•	•	•	
	V3	Welded seat ring / Port orientation 270°			•			•	•	•	•	•	
10	**Seal material**												
	1	EPDM (FDA)						•	•	•	•	•	•
	2	FKM (FDA)						•	•	•	•	•	•
	3	HNBR (FDA); (up to DN 100, OD 4")						•	•	•	•	•	
	4	FFKM						•	•				
11	**Surface quality of the housing**												
	2	Inside R_a ≤ 0.8 µm, outside matt						•	•	•			
	3	Inside R_a ≤ 0.8 µm, outside ground						•	•	•			
	4	Inside R_a ≤ 0.4 µm, outside matt						•	•	•			
	8	Inside R_a ≤ 0.4 µm, outside ground						•	•	•			
12	**Connection fittings**												
	N	Welding end						•	•	•	•	•	•
	J	With connection fitting (please specify separately in each case)						•	•	•	•	•	•
		TK	VARIVENT® flange connection complete, groove flange on housing					•	•	•	•		
		TN	VARIVENT® groove flange cpl., incl. O-ring and connecting parts					•	•	•	•		
		TF	VARIVENT® flange					•	•	•			
		GK	Pipe fitting S complete, male end on housing					•	•	•			
		KO	Liner including groove nut SD					•	•	•			
		GO	Male end SC including seal ring G					•	•	•			
		ASK	Hygienic flange connection complete, groove flange on housing					•	•	•			
		NFK	Hygienic-groove flange complete, incl. O-ring and connecting parts					•	•	•			
		BFK	Hygienic flange					•	•	•			
		CO	Clamp connection					•	•	•	•	•	•

Complete Order Codes

Mixproof Shut-off Valves

Position	Description of the order code		Available for valve type					
			D	B	R	MX	M/ 2.0	M_C/ 2.0
13	**Accessories**							
	/12	Damping cylinder	•	•	•			
	/23	Balancer flushing lock (bottom)		•	•			
	/24	Sterile lock complete (top and bottom)	•	•	•			
	/25	Steam lock complete					•	
	/25	Jacketed valve housings	•	•	•			
	/26	Leakage connector	•	•	•			
	/32	1 m CIP hose with connection parts	•	•	•	•	•	•
	/36	CIP connection blind for double-seat valves	•	•	•	•	•	•
	/37	PS 20 bar	•	•	•			
	/38	PS 16 bar (jacketed valve housing)	•	•	•			
	/37	PS 25 bar	•					
	/41	Test report 2.2	•	•	•	•	•	•
	/42	Inspection certificate 3.1 acc. to EN 10204	•	•	•	•	•	•
	/B	Balancer Cleaning Device BCD			•	•	•	•
	/P	Welded seam ground + Electrolytically polished	•	•	•	•	•	•
	/S	Welded seam ground	•	•	•	•	•	•
	/E	Electrolytically polished	•	•	•	•	•	•
	/EX	Ex-proof design	•	•	•	•	•	•
	/50	Engraved metal plate (TAG-No.)	•	•	•	•	•	•
	/51	Metal plate	•	•	•	•	•	•
	/52	Adhesive ID tag	•	•	•	•	•	•
	/3A	Adhesive ID tag, version of the valve acc. to 3-A standard	•	•	•	•	•	•
	/05	Valve type R			•[2)]			
	/2.0	PMO Valve					•	•
+								
14–19	**Control and feedback system**							
	00000M	Without control and feedback system with air connection metric for air hose Ø 6 / 4 mm						
	00000Z	Without control and feedback system with air connection inch for air hose Ø OD ¼" (6.35 / 4.35 mm)						
	HYD-I	Hydract® feedback system						
	The description of the order code for valves with control and feedback system is contained in the catalog GEA Valve Automation.							

[2)] DN65–DN150, OD 2½"–OD 6", IPS 3"–IPS 6"

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code				-	/	-			-		-		-					+						

Complete Order Codes

Piggable Mixproof Shut-off Valves

The complete order code makes it possible to assemble an order code for a non-standard configuration. All possible options for the valve in question are included.

When ordering a valve, specify not only the order code but also any required connection fittings as well as the air supply and product pressure. Unless specific pressure values are stated, the actuators for valves will be configured for 6 bar air supply pressure and 7 bar product pressure.

Position	Description of the order code		Available for valve type
			L
1	**Valve type**		
	L_H	VARIVENT® piggable double-seat valve, Suspended	
	L_S	VARIVENT® piggable double-seat valve, Upright	
2	**Housing combinations**		
	C	E	•
3	**Supplement to the valve type**		
		Spray cleaning	•
	L	Lifting actuator and spray cleaning	•
	C	Lifting actuator without spray cleaning	•
4/5	**Nominal width (upper housing / lower housing)**		
	DN 40, DN 50, DN 65, DN 80, DN 100		•
	OD 1 ½", OD 2", OD 2½", OD 3", OD 4"		•
6	**Actuator type**		
	S	VARIVENT® actuator air / spring	•
7	**Non-actuated position**		
	Z	Spring-to-close (NC)	•
8	**Actuator**		
	The size of the actuator or actuator-combination depends on the valve type and size, the air supply and product pressure as well as the closing direction of the valve. This information must be specified in the order. Section 8 contains configuration tables.		

Position	Description of the order code			Available for valve type
9	**Valve seat version**	Housing combination C	Housing combination E	**L**
	V1 Welded seat ring / Port orientation 90°	•	•	•
10	**Seal material**			
	1 EPDM (FDA)			•
	2 FKM (FDA)			•
	3 HNBR (FDA); (up to DN 100, OD 4")			•
11	**Surface quality of the housing**			
	2 Inside R_a ≤ 0.8 µm, outside matt			•
	3 Inside R_a ≤ 0.8 µm, outside ground			•
	4 Inside R_a ≤ 0.4 µm, outside matt			•
	8 Inside R_a ≤ 0.4 µm, outside ground			•
12	**Connection fittings**			
	N Welding end			•
	J With connection fitting (please specify separately in each case)			•
	TK VARIVENT® flange connection complete, groove flange on housing			•
	TN VARIVENT® groove flange cpl., incl. O-ring and connecting parts			•
	TF VARIVENT® flange			•
	GK Pipe fitting S complete, male end on housing			•
	KO Liner including groove nut SD			•
	GO Male end SC including seal ring G			•
	ASK Hygienic flange connection complete, groove flange on housing			•
	NFK Hygienic-groove flange complete, incl. O-ring and connecting parts			•
	BFK Hygienic flange			•
	CO Clamp connection			•
13	**Accessories**			
	/12 Damping cylinder			•
	/32 1 m CIP hose with connection parts			•
	/36 CIP connection blind for double-seat valves			•
	/41 Test report 2.2			•
	/42 Inspection certificate 3.1 acc. to EN 10204			•
	/P Welded seam ground + Electrolytically polished			•
	/S Welded seam ground			•
	/E Electrolytically polished			•
	/EX Ex-proof design			•
	/50 Engraved metal plate (TAG-No.)			•
	/51 Metal plate			•
	/52 Adhesive ID tag			•
+				
14–19	**Control and feedback system**			
	00000M Without control and feedback system with air connection metric for air hose Ø 6 / 4 mm			
	00000Z Without control and feedback system with air connection inch for air hose Ø OD ¼" (6.35 / 4.35 mm)			
	The description of the order code for valves with control and feedback system is contained in the catalog GEA Valve Automation.			

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19
Code				-	/	-			-		-		-					+	

Complete Order Codes

Mixproof Shut-off Valves for CIP and Gas Applications

The complete order code makes it possible to assemble an order code for a non-standard configuration. All possible options for the valve in question are included.

When ordering a valve, specify not only the order code but also any required connection fittings as well as the air supply and product pressure. Unless specific pressure values are stated, the actuators for valves will be configured for 6 bar air supply pressure and 5 bar product pressure.

Position	Description of the order code		Available for valve type	
			C	K
1	**Valve type**			
	C	VARIVENT® double-seal valve		
	K	VARIVENT® double-seat valve		
2	**Housing combinations**			
	L	T		
	A	B		
	C	E		
3	**Supplement to the valve type**			
	–			
4/5	**Nominal width (upper housing / lower housing)**			
	DN 25		•	•
	DN 40, DN 50		•	•
	DN 65, DN 80, DN 100		•	•
	DN 125, DN 150		•	•
	OD 1"		•	•
	OD 1 ½", OD 2"		•	•
	OD 2 ½", OD 3", OD 4"		•	•
	OD 6"		•	•
	IPS 2", IPS 3", IPS 4", IPS 6"			•
6	**Actuator type**			
	S	VARIVENT® actuator air / spring	•	•
	Z	VARIVENT® actuator air/spring, air-assisted	•	•
	G	VARIVENT® manual actuator, lockable		•
7	**Non-actuated position**			
	Z	Spring-to-close (NC)	•	•
	–[1)]	Indifferent		•
8	**Actuator**			
	The size of the actuator or actuator-combination depends on the valve type and size, the air supply and product pressure as well as the closing direction of the valve. This information must be specified in the order. Section 8 contains configuration tables.			

[1)] if the VARVENT® manual actuator is selected

Position	Description of the order code			Housing combination						Available for valve type	
				A	B	C	E	L	T	C	K
9	**Valve seat version**										
	L0	Loose seat ring / Clamp connection		•	•	•	•	•	•		•
	V0	Fixed vertical port						•	•	•	•
	V0	Welded seat ring / Port orientation 0°		•	•	•	•				•
	V1	Welded seat ring / Port orientation 90°		•	•	•	•				•
	V2	Welded seat ring / Port orientation 180°			•						•
	V3	Welded seat ring / Port orientation 270°			•						•
10	**Seal material**										
	1	EPDM (FDA)								•	•
	2	FKM (FDA)								•	•
	3	HNBR (FDA); (up to DN 100, OD 4")								•	•
	4	FFKM									•
11	**Surface quality of the housing**										
	2	Inside R_a ≤ 0.8 µm, outside matt								•	•
	3	Inside R_a ≤ 0.8 µm, outside ground								•	•
	4	Inside R_a ≤ 0.4 µm, outside matt								•	•
	8	Inside R_a ≤ 0.4 µm, outside ground								•	•
12	**Connection fittings**										
	N	Welding end								•	•
	J	With connection fitting (please specify separately in each case)								•	•
		TK	VARIVENT® flange connection complete, groove flange on housing							•	•
		TN	VARIVENT® groove flange cpl., incl. O-ring and connecting parts							•	•
		TF	VARIVENT® flange							•	•
		GK	Pipe fitting S complete, male end on housing							•	•
		KO	Liner including groove nut SD							•	•
		GO	Male end SC including seal ring G							•	•
		ASK	Hygienic flange connection complete, groove flange on housing							•	•
		NFK	Hygienic-groove flange complete, incl. O-ring and connecting parts							•	•
		BFK	Hygienic flange							•	•
		CO	Clamp connection							•	•

Complete Order Codes

Mixproof Shut-off Valves for CIP and Gas Applications

Position	Description of the order code		Available for valve type	
			C	K
13	**Accessories**			
	/12	Damping cylinder	•	•
	/16	Two-position-stop		•[2)]
	/16	Two-position-stop for T.VIS®	•	•
	/20	Limit-stop opening		
	/21	Limit-stop closing	•	•
	/24	Sterile lock complete	•	•
	/25	Jacketed valve housings		•
	/27	Version with only one flush valve	•	
	/28	Lower housing port suitable for orbital welding		•
	/32	1 m CIP hose with connection parts	•	
	/37	PS 20 bar		•
	/38	PS 16 bar (jacketed valve housing)		•
	/41	Test report 2.2	•	•
	/42	Inspection certificate 3.1 acc. to EN 10204	•	•
	/C-S	Stainless steel flush valve off 80 °C	•	
	/P	Welded seam ground + Electrolytically polished	•	•
	/S	Welded seam ground	•	•
	/E	Electrolytically polished	•	•
	/EX	Ex-proof design	•	•
	/50	Engraved metal plate (TAG-No.)	•	•
	/51	Metal plate	•	•
	/52	Adhesive ID tag	•	•
	/K1	Straight leakage pipe		•
	/K2	90° leakage pipe		•
+				
14–19	**Control and feedback system**			
	00000M	Without control and feedback system with air connection metric for air hose Ø 6 / 4 mm		
	00000Z	Without control and feedback system with air connection inch for air hose Ø OD ¼" (6.35 / 4.35 mm)		
	The description of the order code for valves with control and feedback system is contained in the catalog GEA Valve Automation.			

2) Non-activated position: Spring-to-close (NC)

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code				-	/	-			-		-		-					+						

Complete Order Codes

Mixproof Divert Valves

The complete order code makes it possible to assemble an order code for a non-standard configuration. All possible options for the valve in question are included.

When ordering a valve, specify not only the order code but also any required connection fittings as well as the air supply and product pressure. Unless specific pressure values are stated, the actuators for valves will be configured for 6 bar air supply pressure and 5 bar product pressure.

Position	Description of the order code		Available for valve type	
			Y	X_R
1	**Valve type**			
	Y	VARIVENT® double-seat valve		
	X_R	VARIVENT® Flow diversion device		
2	**Housing combinations**			
	U X Y Z M N G		•	
	W		•	•
	K			•
3	**Supplement to the valve type**			
		Spray cleaning	•	
	L	Lifting actuator and spray cleaning	•	
	C	Lifting actuator without spray cleaning	•	
	R	Radial sealing		•[1]
4/5	**Nominal width (upper housing / lower housing)**			
	DN 25, DN 40, DN 50, DN 65, DN 80, DN 100, DN 125, DN150		•	
	OD 1", OD 1 ½", OD 2", OD 2½", OD 3", OD 4"		•	•
	OD 6"		•	
	IPS 2", IPS 3", IPS 4", IPS 6"		•	
6	**Actuator type**			
	S	VARIVENT® actuator air/spring	•	
	Z	VARIVENT® actuator air/spring, air-assisted		•[1]
	G	VARIVENT® manual actuator, lockable	•[2]	
7	**Non-actuated position**			
	Z	Spring-to-close (NC)	•	•
8	**Actuator**			
	The size of the actuator depends on the valve type and size, the air supply and product pressure as well as the closing direction of the valve. This information must be specified in the order. Section 8 contains configuration tables.			

[1] Obligatory for this valve type [2] Without lifting function

Position	Description of the order code			Available for valve type	
9	**Valve seat version**		Housing combination K W U X Y Z M N G	**Y**	**X_R**
	L00	Loose seat ring / Clamp connection	• • • • • • • • •	•	•
10	**Seal material**				
	1	EPDM (FDA)		•	•
	2	FKM (FDA)		•	•
	3	HNBR (FDA); (up to DN 100, OD 4")		•	•
	4	FFKM		•	•
11	**Surface quality of the housing**				
	2	Inside R_a ≤ 0.8 µm, outside matt		•	•
	3	Inside R_a ≤ 0.8 µm, outside ground		•	•
	4	Inside R_a ≤ 0.4 µm, outside matt		•	•
	8	Inside R_a ≤ 0.4 µm, outside ground		•	•
12	**Connection fittings**				
	N	Welding end		•	•
	J	With connection fitting (please specify separately in each case)		•	•
		TK	VARIVENT® flange connection complete, groove flange on housing	•	
		TN	VARIVENT® groove flange cpl., incl. O-ring and connecting parts	•	
		TF	VARIVENT® flange	•	
		GK	Pipe fitting S complete, male end on housing	•	
		KO	Liner including groove nut SD	•	
		GO	Male end SC including seal ring G	•	
		ASK	Hygienic flange connection complete, groove flange on housing	•	
		NFK	Hygienic-groove flange complete, incl. O-ring and connecting parts	•	
		BFK	Hygienic flange	•	
		CO	Clamp connection	•	•

Complete Order Codes

Mixproof Divert Valves

Position	Description of the order code		Available for valve type	
			Y	X_R
13	**Accessories**			
	/12	Damping cylinder	•	
	/20	Limit-stop opening	•	
	/21	Limit-stop closing		•[1)]
	/24	Sterile lock complete (top and bottom)		
	/25	Jacketed valve housings	•	
	/26	Leakage connector	•	
	/32	1 m CIP hose with connection parts	•	
	/36	CIP connection blind for double-seat valves	•	
	/37	PS 20 bar	•	
	/38	PS 16 bar (jacketed valve housing)	•	
	/41	Test report 2.2	•	•
	/42	Inspection certificate 3.1 acc. to EN 10204	•	•
	/P	Welded seam ground + Electrolytically polished	•	•
	/S	Welded seam ground	•	•[1)]
	/E	Electrolytically polished	•	
	/EX	Ex-proof design	•	
	/50	Engraved metal plate (TAG-No.)	•	•
	/51	Metal plate	•	•
	/52	Adhesive ID tag	•	•
	/3A	Adhesive ID tag, version of the valve acc. to 3-A standard	•	•[1)]
+				
14–19	**Control and feedback system**			
	00000M	Without control and feedback system with air connection metric for air hose Ø 6 / 4 mm		
	00000Z	Without control and feedback system with air connection inch for air hose Ø OD ¼" (6.35 / 4.35 mm)		
	The description of the order code for valves with control and feedback system is contained in the catalog GEA Valve Automation.			
	+TM20FDD-N8B0Z/69k			

[1)] Obligatory for this valve type

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19						
Code				-	/	-			-		-		-					+							

Complete Order Codes

Tank Bottom Valves

The complete order code makes it possible to assemble an order code for a non-standard configuration. All possible options for the valve in question are included.

When ordering a valve, specify not only the order code but also any required connection fittings as well as the air supply and product pressure. Unless specific pressure values are stated, the actuators for valves will be configured for 6 bar air supply pressure and 5 bar product pressure.

Position	Description of the order code		Available for valve type				
			N	N/ ECO	U	T	MT
1	**Valve type**						
	N	VARIVENT® single-seat shut-off valve					
	N	ECOVENT® single-seat shut-off valve (always with /ECO at position 3)					
	U	VARIVENT® single-seat shut-off valve					
	T	VARIVENT® double-seat shut-off valve					
	MT	VARIVENT® 24/7 PMO mixproof bottom valve					
2	**Housing combinations**						
	L	T				• [1]	• [1]
	F	D	• [1), 2]	• [1), 2]	• [1), 2]	• [2]	• [2]
	H	R					• [3]
3	**Supplement to the valve type**						
	/ ECO	ECOVENT® shut-off valve		•			
	V	Long-stroke valve	• [6]		• [4]		
	R	Radial sealing			•		
	RL	Radial sealing, with lifting actuator and spray cleaning				•	
	RC	Radial sealing, with lifting actuator without spray cleaning				•	
	L	Radial sealing, with lifting actuator and spray cleaning					• [10]
	C	Radial sealing, with lifting actuator without spray cleaning					• [10]
	T	Radial sealing, with lifting and divisible actuator without spray cleaning					• [11]
	U	Radial sealing, with lifting and divisible actuator with spray cleaning					• [11]
4/5	**Nominal width (upper housing / lower housing)**						
	DN 25, DN 40, DN 50, DN 65, DN 80, DN 100		•	•	•	•	•
	DN 125, DN150		•		•	•	•
	OD 1", OD 1 ½", OD 2", OD 2½", OD 3", OD 4"		•	•	•	•	•
	OD 6"		•		•	•	•
	IPS 2", IPS 3", IPS 4", IPS 6"		•		•	•	•
6	**Actuator type**						
	S	VARIVENT® actuator air / spring	•		•	•	•
	E	ECOVENT® actuator air / spring		•			
	Z	VARIVENT® actuator air / spring, air-assisted	•		•		
	J	VARIVENT® actuator air / air	•		•		
	G	VARIVENT® manual actuator, locked with thread	•		•		
	L	VARIVENT® long-stroke actuator air / spring	• [6]				
7	**Non-actuated position**						
	Z	Spring-to-close (NC)	•	•	•	•	•
	A	Spring-to-close (NO)	•	•	•		
	– [5]	Indifferent	•		•		
8	**Actuator**						
	The size of the actuator or actuator-combination depends on the valve type and size, the air supply and product pressure as well as the closing direction of the valve. This information must be specified in the order. Section 8 contains configuration tables.						

[1] With housing connection flange T or T-S [2] With housing connection flange U or U-S [3] With housing connection flange MG or MN
[4] Only for DN 80–DN 100 and OD 3"–OD 4" [5] if the VARVENT® actuator air/air or manual actuator is selected [6] only for DN 65 - DN 100 and OD 2½" - OD 4"

Position	Description of the order code			Housing combination						Available for valve type				
				L	T	F	D	H	R	N	N/ ECO	U	T	MT
9	**Valve seat version**													
	L0	Loose seat ring / Clamp connection		•	•	•	•	•	•	•	•	•	•	•
10	**Seal material**													
	1	EPDM (FDA)								•	•	•	•	•
	2	FKM (FDA)								•	•	•	•	•
	3	HNBR (FDA); (up to DN 100, OD 4")								•	•	•	•	•
	4	FFKM								•	•	•[6]		
11	**Surface quality of the housing**													
	2	Inside R_a ≤ 0.8 µm, outside matt								•	•	•	•	•
	3	Inside R_a ≤ 0.8 µm, outside ground								•	•	•	•	•
	4	Inside R_a ≤ 0.4 µm, outside matt								•	•	•	•	•
	8	Inside R_a ≤ 0.4 µm, outside ground								•	•	•	•	•
12	**Connection fittings**													
	N	Welding end								•	•	•	•	•
	J	With connection fitting (please specify separately in each case)								•	•	•	•	•
		TK	VARIVENT® flange connection complete, groove flange on housing							•	•	•	•	•
		TN	VARIVENT® groove flange cpl., incl. O-ring and connecting parts							•	•	•	•	•
		TF	VARIVENT® flange							•	•	•	•	•
		GK	Pipe fitting S complete, male end on housing							•	•	•	•	•
		KO	Liner including groove nut SD							•	•	•	•	•
		GO	Male end SC including seal ring G							•	•	•	•	•
		ASK	Hygienic flange connection complete, groove flange on housing							•	•	•	•	•
		NFK	Hygienic-groove flange complete, incl. O-ring and connecting parts							•	•	•	•	•
		BFK	Hygienic flange							•	•	•	•	•
		CO	Clamp connection							•	•	•	•	•

[6] Not for radial sealing valves

Complete Order Codes

Position	Description of the order code		Available for valve type				
			N	N/ ECO	U	T	MT
13	**Accessories**						
	/07	TEFASEP® gold (FDA)	•[7]				
	/12	Damping cylinder	•		•	•	
	/16	Two-position-stop	•[8]		•[9]		
	/16	Two-position-stop for T.VIS	•		•		
	/20	Limit-stop opening	•		•	•	
	/21	Limit-stop closing	•		•	•	
	/24	Sterile lock complete	•		•	•	
	/25	Jacketed valve housings	•[7]	•	•[7]	•[7]	
	/32	1 m CIP hose with connection parts				•	
	/36	CIP connection blind for double-seat valves				•	
	/37	PS 20 bar	•		•	•	
	/38	PS 16 bar (jacketed valve housing)	•		•	•	
	/41	Test report 2.2	•	•	•	•	•
	/42	Inspection certificate 3.1 acc. to EN 10204	•	•	•	•	•
	/P	Welded seam ground + Electrolytically polished	•	•	•	•	•
	/S	Welded seam ground	•	•	•	•	•
	/E	Electrolytically polished	•	•	•	•	•
	/EX	Ex-proof design	•	•	•	•	•
	/MG	Housing connection MG graduated[10]					•
	/MN	Housing connection MN groove[10]					•
	/MS	Housing connection MS straight[11]					•
	/T	Tank connection type T	•	•	•	•	•
	/T-S	Tank connection type T-S	•	•	•	•	•
	/U	Tank connection type U	•	•	•	•	•
	/U-S	Tank connection type T-S	•	•	•	•	•
	/50	Engraved metal plate (TAG-No.)	•	•	•	•	•
	/51	Metal plate	•	•	•	•	•
	/52	Adhesive ID tag	•	•	•	•	•
	/3A	Adhesive ID tag, version of the valve acc. to 3-A standard	•	•	•	•	•
	/TL	Housing tangential left	•	•	•	•	•
	/TR	Housing tangential right	•	•	•		•
	/TT	Housing tangential straight	•	•	•		•
+			•	•	•		•
14–19	**Control and feedback system**						
	00000M	Without control and feedback system with air connection metric for air hose Ø 6 / 4 mm					
	00000Z	Without control and feedback system with air connection inch for air hose Ø OD ¼" (6.35 / 4.35 mm)					
	The description of the order code for valves with control and feedback system is contained in the catalog GEA Valve Automation.						

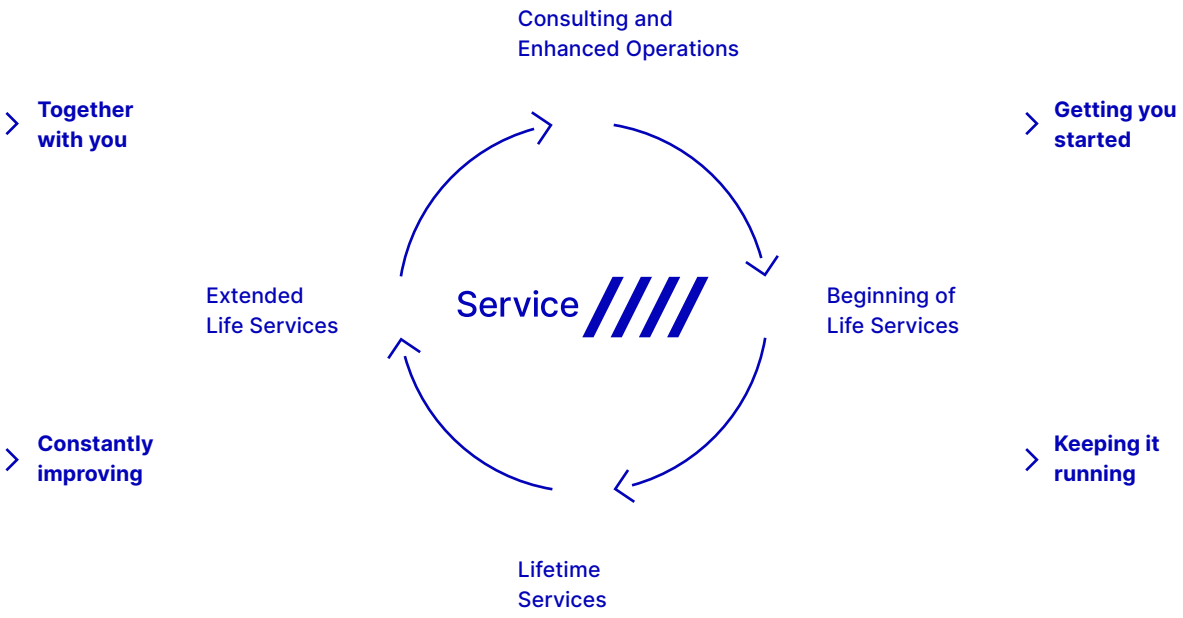
[7] only for DN 25–DN 100 and OD 1"–OD 4" [8] Non-activated position: Spring-to-close (NC) [9] Non-activated position: Spring-to-open (NO)
[10] for VARIVENTR 24/7 PMO mixproof bottom valve [11] for VARIVENTR 24/7 PMO mixproof bottom valve with divisible actuator

Position	1	2	3		4/5		6	7		8		9		10	11	12	13		14 to 19					
Code				-	/	-			-		-		-					+						

Our service package for dependable valve technology

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 help 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.

Description of Certificates

3-A		3-A Sanitary Standards, Inc. (3-A SSI) is an independent, non-profit corporation dedicated to advancing hygienic equipment design for the food, beverage, and pharmaceutical industries.
24/7 PMO VALVE 2.0® NON-STOP PRODUCTION		24/7 PMO VALVE® is a registered trade mark of GEA Tuchenhagen GmbH. It describes double-seat valves that have been authorized for use in PMO-regulated systems for carrying out the seat lift in order to clean the leakage chamber while the other pipeline is carrying product. This grants system operators the possibility of cleaning all valve components in contact with the product in parallel with the production process. In this way, the valves permit uninterrupted production on a 24/7 basis.
AS-i		Actuator Sensor interface. BUS system for the lowest field level.
ATEX		Atmosphères Explosibles. ATEX comprises the directives of the European Union in the area of explosion protection. Complies with the applicable requirements of ATEX directives: 2014/34/EU.
CCCEx		Complies with the applicable requirements of CCCEx directives in China.
cCSAus		Test of a product by CSA according to applicable safety standards in Canada and the USA.
CE		Conformité Européenne. By affixing the CE mark, the manufacturer confirms that the product complies with the European directives 765/2008 applicable to the specific product.
CSA		Canadian Standards Association. A non-governmental Canadian organization which issues standards as well as checking and certifying the safety of products. It is now globally active.
cULus		Test of a product by UL according to applicable safety standards in Canada and the USA.
DeviceNet		BUS system of the ODVA organization for complex communication on various field levels.
EG 1935/2004*		Materials in contact with the product used in valves from GEA Tuchenhagen GmbH are in accordance with EC regulation 1935/2004. This defines a general framework for materials and objects intended to come into contact with foodstuffs.
EHEDG		The guidelines drawn up by the European Hygienic Engineering and Design Group serve to implement food safety. The aim of the organisation is to improve compliance with the hygienic design of components and technical expertise in the industry. This also includes the ease of cleaning the equipment.
FDA		Food and Drug Administration. US supervisory authority for foodstuffs and pharmaceuticals. This authority issues approvals and certificates for products and materials that are used in the foodstuffs and pharmaceuticals industries.
IECEx		IECEx: International Electrotechnical Commission System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres. Complies with the applicable requirements according to IECEx directives.
IO-Link		IO-Link is a globally standardized IO technology (IEC 61131-9) for communicating with sensors and actuators. This powerful point-to-point communication is based on the 3-wire connection of sensors and actuators, without additional requirements for the cable material. IO-Link is therefore not a fieldbus, but rather a further development of the proven connection technology for sensors and actuators.
ODVA		ODVA is a worldwide association comprising leading automation companies. It develops network protocols and standards in the joint interests of its members, which are used for the international interoperability of production systems.
TÜV		Technischer Überwachungs-Verein. The German TÜV is a private company which carries out technical safety checks as prescribed in national legislation or regulations.
UKCA		UK Conformity Assessed. By affixing the UKCA marking, the manufacturer confirms that the product complies with the product-specific applicable UK regulations.
UKEx		UKEx includes the guidelines for Great Britain. Complies with applicable requirements acc. UKEx Directive: UKSI 2016: 1107.
UL		Underwriters Laboratories. An organization founded in the USA for checking and certifying products and their safety.

* not possible for HNBR

Abbreviations and Terms

Abbreviation	Explanation
°C	Degrees Celsius, unit of measurement for temperature
°F	Degrees Fahrenheit, unit of measurement for temperature
3-A	Standard of 3-A Sanitary Standards, Incorporated (3-A SSI)
3D	Three-dimensional
A	Ampere, unit of measurement of current intensity or Output, term used in automation
AC	Alternating Current
ADI free	All elastomer compounds are free of animal-derived ingredients
AISI	American Iron and Steel Institute, association of the American steel industry
ANSI	American National Standards Institute, American body for standardizing industrial processes
approx.	approximately
AS-i	Actuator Sensor interface, standard for fieldbus communication
ASME	American Society of Mechanical Engineers, professional association of mechanical engineers in the USA
ASME-BPE	Standard of the ASME's – bioprocessing equipment association
ATEX	Atmosphères Explosibles, synonymous with the directives of the European Union for potentially explosive areas
bar	Unit of measurement for pressure. All pressure values [barg/psig] refer to positive pressure [bar_g / psi_g], unless specifically stated otherwise.
bar_g	Unit of measurement for pressure relative to atmospheric pressure
CAN	Controller Area Network; asynchronous serial bus system
CE	Conformité Européenne, administrative symbol for the free movement of industrial products
CIP	Cleaning In Place, designates a process for cleaning technical process systems.
CRN	The Canadian Registration Number is issued by a Canadian Jurisdiction and covers pressurized components. The authorization is needed to operate these components in Canada.
CSA	Canadian Standards Association, a non-governmental Canadian Standardization organization
dB	Decibel, one tenth of a bel, named after Alexander Graham Bell and used for identifying levels and dimensions
DC	Direct Current
DIN	Deutsches Institut für Normung e. V. Standardization organization in the Federal Republic of Germany, DIN = synonym for standards issued by the organization
DIP	Dual Inline Package, design of a switch
DN	Diameter Nominal, DIN nominal width
Device Net	Network system used in the automation industry to interconnect control devices for data exchange
E	Input, term used in automation
EAC	Certification of technical confirmity from the customs union of Russia/Balarus/Kazakhstan
EG No. 1935/2004	Regulation of the European Parliament which lays down common rules for materials which come, or may come, into contact with food, either directly or indirectly.
EHEDG	European Hygienic Engineering and Design Group. Consortium of equipment manufacturers, food industries, research institutes as well as public health authorities
EN	European standard, rules of the European Committee for Standardization
EPDM	Ethylene propylene diene rubber, acronym acc. to DIN / ISO 1629
Ex	Synonym for ATEX
FB	Feedback
FDA	Food and Drug Administration, official foodstuffs monitoring in the United States
FEM calculation	Finite Element Method; calculation process for simulating solids
FKM	Fluorinated rubber, acronym acc. to DIN / ISO 1629
H	Henry, unit of measurement for inductance
HNBR	Hydrated acrylonitrile butadiene rubber, acronym acc. to DIN / ISO 1629
Hz	Hertz, unit of frequency named after Heinrich Hertz
I	Formula symbol for electrical current
IEC	International Electrotechnical Commission, international standardization organization for electrical and electronic engineering
IP	Ingress Protection / International Protection, index of protection class acc. to IEC 60529
IPS	Iron Pipe Size, American pipe dimension
ISA	International Society of Automation, international US organization of the automation industry

Abbreviations and Terms

Abbreviation	Explanation
ISO	International Organization for Standardization, international organization that produced international standards, ISO = synonym for standards from the organization
kg	Kilogram, unit of measurement for weight
Kv	The Kv value corresponds to the water flow rate through a valve (in m^3 / h) at a pressure differential of 0.98 bar and a water temperature of 5 °C to 30 °C.
Kvs	The Kv values of a valve at nominal stroke (100 % opening) is designated the Kvs value
L	Conductive
LED	Light-Emitting Diode
LEFF®	Function of the T.VIS® valve informations system for cyclical pulsing during the lifting process; Low-Emission Flip Flop
LoTo	Abbreviation for lockout – tagout, is an occupational health and safety procedure in which all energies of systems that could be dangerous for employees are isolated, interlocked and marked
mm	Millimeter, unit of measurement for length
M	Metric, system of units based on the meter or Mega, one million times a unit
m^3/h	Cubic meters per hour, unit of measurement for volumetric flow
max.	Maximum
NAMUR	Standardization working association for measuring and control technology in the chemical industry, synonym for the interface type of the organization, especially for potentially explosive atmospheres
NC	Normally Closed; valve or solenoid valve control which is closed in idle status
NO	Normally Open; valve or solenoid valve control which is open in idle status
NOT-element	Logic element, NOT gate
NPN	Signal transmission against reference potential, current-consuming
NPT	National Pipe Thread, US thread standard for self-sealing pipe fittings
OD	Outside Diameter, pipe dimension
ODVA	Open DeviceNet Vendor Association, global association for network standards
PA 12/L	Polyamide
Pg	Armoured thread
PMO	Pasteurized Milk Ordinance
PN	Nominal pressure for pipeline systems according to EN 1333, rated pressure in bar at room temperature (20 °C)
PNP	Signal transmission against reference potential, current-supplying
Pressure Equipment Directive 2014/68/EU	Directive of the European Parliament and the Council Directive for layout and conformity evaluation for pressure equipment and assemblies with a maximim pressure (PS) of more than 0.5 bars.
PPO	Polyphenylene oxide, thermoplastic material
PS	Maximum permitted operating pressure at which the components can operate safely at maximum allowable temperature (TS)
psi	Unit of measurement for pressure, pound-force per square inch, 1 psi = 6894.75 Pa. All pressure values [bar/psi] refer to positive pressure [bar_g / psi_g], unless specifically stated otherwise.
psi_g	Unit of measurement for pressure relative to atmospheric pressure
PV	Solenoid valve
R_a in µm	Average roughness value, describes the roughness of a technical surface
International Protection-Code IP67, IP66, IP69	Classifies and rates the degree of protection provided against intrusion dust, accidental contact, and water
SET-UP	Self-learning installation, the SET-UP procedure carries out all necessary settings for generating messages during commissioning and maintenance.
SIP	Sterilization in Place, refers to a process for cleaning technical process systems
SMS	Svensk Mjölk Standard, Scandinavian pipe dimension
SW	Indicates the size of a tool spanner, “Schlüsselweite”
TA-Luft VDI 2440	If a product is certified according to TA Luft it meets the requirements for proof of high grade performance according to TA Luft of 1.0× 10-4 mbar x l / (s x m) at service conditions under the VDI guideline 2440. The product will hence be tested for tightness.
TEFASEP® gold	Brand name for GEA's proprietary valve seat seal (hard sealing)
T.VIS®	GEA Tuchenhagen valve information system, control top system from GEA Tuchenhagen

Abbreviation	Explanation
TS	Maximum permitted operating temperature
UL	Underwriters Laboratories, a certification organization established in the USA
USP Class VI	The United States Pharmacopeial Convention (USP) is a scientific nonprofit organization that sets standards to help protecting public health. Class VI administer tests and impacts of material and their substances on animal and human tissues.
UV	Ultraviolet, ultraviolet radiation is a wavelength of light
V	Volt, unit of measurement for voltage
VARICOMP®	Pipe expansion compensator from GEA Tuchenhagen
VMQ	High-polymer vinyl methyl polysiloxane, silicone rubber, MVQ = synonym
W	Watt, unit of measurement for power
Y	Control air connection for the working cylinder, designation from pneumatic systems
µ	Micro, one millionth of a unit
Ω	Ohm, the unit of electrical resistance named after Georg Simon Ohm

CAD Files

Typical application and description
You can receive two-dimensional and/or three-dimensional drawing files of our components for making your piping planning. For this purpose, please send us your specific request, stating the particular order code and the required drawing format. The required files will then be individually prepared for you.

Available drawing formats:

	Format	Name
2D formats	drw	Native Pro / E
	igs (2D)	IGS file
	dxf	AutoCAD drawing exchange
	pdf (2D)	Adobe Acrobat document
	tif	TIFF (plot)
3D formats	asm	Native Pro / E
	igs (3D)	IGS file
	pdf (3D)	Adobe Acrobat document
	stp	STP file
	bmp (3D)	Bitmap image
	jpg (3D)	JPEG image
	tif (3D)	TIFF image
	sat	Standard ACIS

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