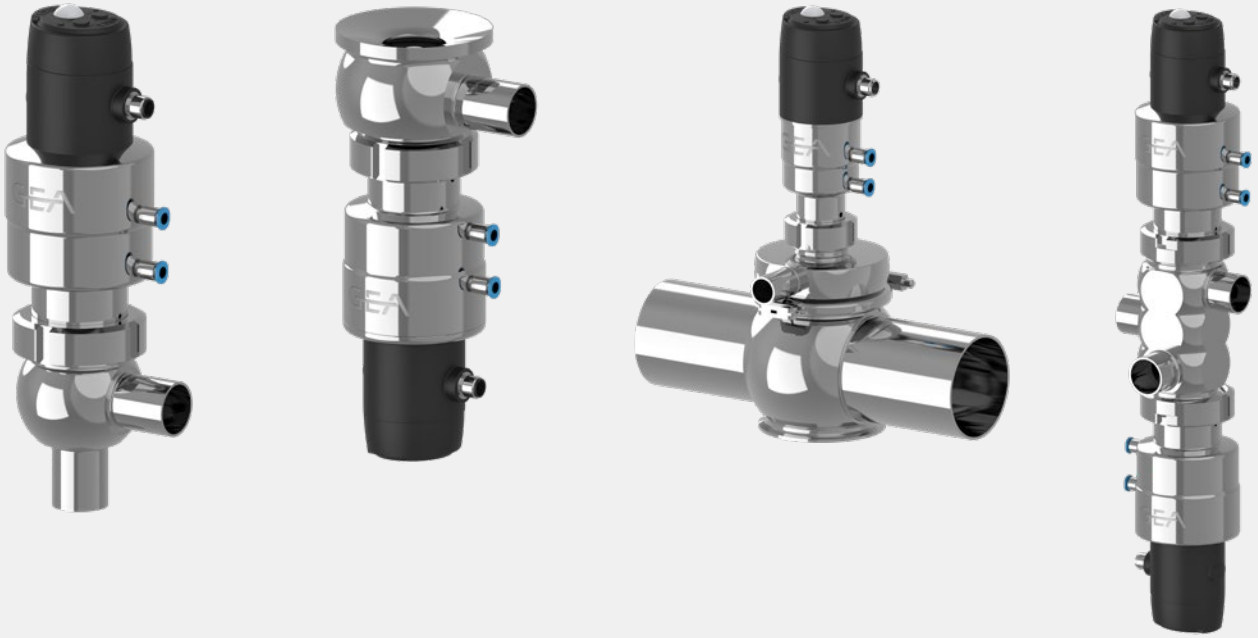
Engineering for a better world.

GEA.com

GEA VESTA®

Sterile Valves



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Publication date: July 2025

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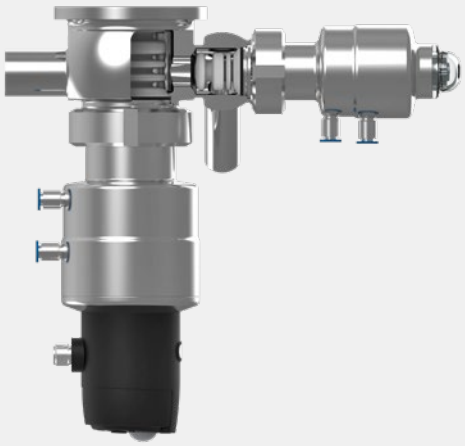
CONTENTS

GEA D-tec®
Stem diaphragm technology



GEA VESTA®
PTFE bellows technology

Aseptic Valve Technology

Efficiency delivering perfect results
Aseptic 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 aseptic valves are designed to be efficient and cost-effective for their particular applications, leading to sustainable operation and considerable savings potential.

GEA Aseptomag®
Stainless steel bellows technology

GEA valve technology controls flow processes

Aseptic valves face exceptionally high demands within UltraClean and Aseptic processes. As product and process safety has the highest priority within these applications, our valves are equipped with a hermetic sealing element to avoid any ingress of microorganisms into a sterile process. With our three different valve lines, we provide the perfect component for all kind of applications and personal preferences. You can be assured that they all provide highest quality in terms of hygienic design and sustainability.

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

Solutions for every task

The three valve lines distinguish themselves via the hermetic sealing concept. The Aseptomag® valve line is based on stainless steel bellows technology, whereas the D-tec® valve line uses stem diaphragm technology to hermetically seal the sterile process pipe against the atmosphere. Both valve lines are mainly used for dairy, beverage and food applications. The GEA VESTA® valve line bases on PTFE bellows technology and is a true asset for applications in the pharmaceutical, biotech and cosmetics industry.

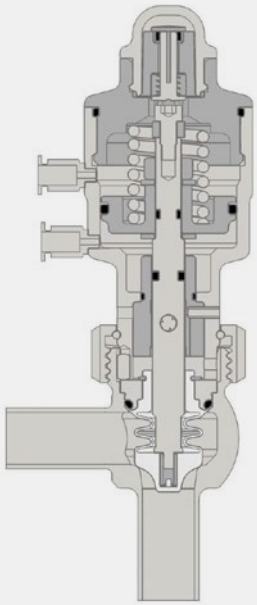
GEA VESTA®
Shut-off valve type HBA

GEA VESTA® Valve Technology

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

The high-quality valve program provides everything required to ideally serve these industries. Thanks to the modular structure, the valves can be tailor-made for specific process conditions and still meet all requirements from a regulatory point of view.

From a technical and also economical point of view, GEA VESTA® Sterile valves are the ideal alternative to diaphragm valves.



Sectional view of **GEA VESTA®**
Shut-off valve type HLA

Innovative valve concept
Thanks to the hermetic sealing of the valve stem by a single-piece PTFE bellow, GEA VESTA® Sterile valves safely separate product-wetted areas from the environment and thus significantly contribute to process and product safety. The valve line is based on a seat concept and further convinces by optimized flow and dead-space-free valve housing design.

Hygienic design
The consequent hygienic design of all relevant areas has been of great importance throughout the development of the GEA VESTA® Valve line. The closed outer design is free of unnecessary hollow spaces and drainable surfaces enable an easy outside cleaning.

Maintenence-friendly
The safe and easy handling enables a quick mounting/dismounting of GEA VESTA® Sterile valves and positively contributes to efficient routine checks and maintenance work. GEA VESTA® Sterile valves are free of loose parts and all maintenance steps can be executed with standard tools. PTFE bellows showing no wear during routine checks can be re-used without hesitation.

GEA VESTA® Sterile valves at a glance

- Optimized flow and dead-space-free design
- Optimized CIP/SIP cleanability
- Hermetic sealing of the product-wetted area by PTFE bellow
- Defined sealing pre-load by metallic stop
- Valve in accordance with EHEDG design guidelines
- Self-locking groove nut connection
- Safe and easy maintenance

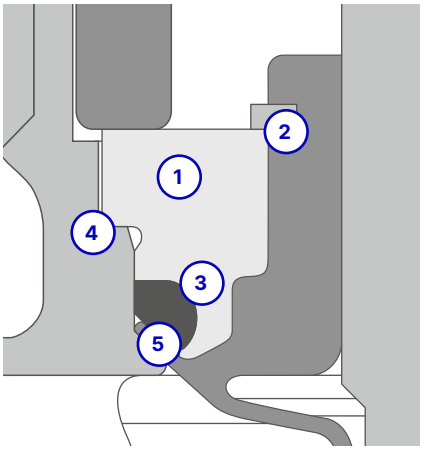
Internal assembly

Valve housing type HTA

GEA VESTA® Modular Structure

PTFE bellow as key element
Key element of GEA VESTA® Sterile valves is a single-piece PTFE bellow made of the material TFM 1705. Adding to its excellent chemical resistance against almost all media, TFM 1705 also complies with all standards relevant for the pharmaceutical industry, such as e.g. FDA 21 CFR 177.1550 and USP class VI. The high-value surface finish (Ra ≤ 0.8 µm), the seamless and mhermetic sealing as well as the CIP/SIP optimized design are other characteristic features. The patented bellow sealing system safely separates the product-wetted area from the atmosphere in all process steps and furthermore seals the valve seat.

Valve housing
The housings for GEA VESTA® Sterile valves are made of material 1.4435 / AISI 316 L, they come with a material certificate according to EN10204/3.1 by default and are labeled according to explanation note AD A4. The pipe connections enable orbital welding with closed orbital cartridge systems. The different valve types offer various housing options by default, and thanks to the modular valve structure, customized housing solutions are possible.



Characteristics of the patented bellow sealing system

1 Compensation of forces from product overpressure by metallic thrust collar
2 Protection provided by circlip under vacuum conditions
3 Constant contact pressure due to elastomere o-ring
4 Defined pre-load due to metallic stop
5 Sealing of housing achieved by thin-walled PTFE sealing lip

Pneumatic actuators
made of plastic and stainless steel

Open feedback unit for
pneumatic actuator

Stroke limiter for
pneumatic actuator

Pneumatic actuators made of plastic and stainless steel

For automated applications the GEA VESTA® Valve line offers pneumatic actuators made of plastic. The actuation system is made of high-performance plastic PPS. This plastic material offers a high chemical resistance, it withstands temperatures up to 180 °C, has good mechanical properties and is furthermore resistant to aging. Alternatively, GEA VESTA® Sterile valves can also be equipped with pneumatic actuators made of stainless steel. These actuators offer the same design characteristics as actuators made of plastic and are furthermore autoclavable.

Pneumatic actuators are maintainable, and thanks to their intelligent modular structure no danger from the release of spring forces is present. The fail-safe position (up to DN32/OD1"/ISO33,7 - plastic actuators up to DN50/OD2"/ISO60,3) is reversible and the modification can be easily executed on site. Pneumatic actuators of the GEA VESTA® Valve line provide integrated fittings for air hoses Ø 6 × 1 mm / ¼" and a visual valve status indicator. A bore hole in the lantern area enables the safe visual detection of leakages.

Accessories

With two types of stroke limiters (open or close) and an open feedback unit for external proximity switches for the automated surveillance of the valve position, the GEA VESTA® Valve line offers useful options for pneumatic actuators. Further options for the actuator as well as for enhanced process integration can be found in the sections “Options” respectively “Control and feedback systems”.

T.VIS® V-1
position indicator

T.VIS® V-1
control top

T.VIS® P-1
positioner

GEA VESTA® Shut-off valve HCA
with manual actuator

Control and feedback systems

The T.VIS® V-1/V-20 has been specifically developed for GEA VESTA® Sterile valves and can be either executed as position indicator or control top. The automated end position programming can be achieved within seconds by using the buttons or the integrated programming input. The T.VIS® P-1/P-20 is a compact positioner for pneumatic process valves. By defining a setpoint (4–20 mA) the process valve can be set to any position. The position is monitored via a measuring system with a resolution of 0.01 mm and controlled by two integrated solenoid valves. GEA VESTA® Sterile valves in larger nominal diameters can be optionally equipped with a manual T.VIS® M-15 or an automated T.VIS® A-15.

Manual actuators

GEA VESTA® Sterile valves can also be equipped with manual actuators, based on a particularly simple technical concept. An integrated spring package provides a defined pressure at the PTFE bellow in the closed position and avoids unintended deformation of the bellow. The spring force only appears shortly before reaching the fully closed position, and in intermediate positions manually actuated valves can be operated with minimum effort. Also, changes in the seat area of the bellow due to ingress of process conditions have no impact on the leak-thightness: the spring automatically adjusts the system to the new conditions. Furthermore, GEA VESTA® Sterile valves with a manual actuator offer the possibility of a lead sealing and can furthermore be equipped with a LOTO safety device if needed.

Labeling on valve housing

Manufacturing

Surface quality
High-quality surfaces are a mandatory pre-requisite in sterile process technology to enable a safe and reliable process. GEA VESTA® Sterile valves provide a surface quality of $R_a \leq 0.8\,\mu m$ (optionally electro-polished) in product-wetted areas by default. Higher surface finishes are available upon request.

Production quality and material traceability
GEA VESTA® Sterile valves are subject to the highest quality criteria in their production. A high production depth and a comprehensive quality management system offer a constantly high quality level and furthermore provide for the safe and seamless traceability of the parts.

- Continuous quality testing in manufacturing
- Labeling of all parts
- Valve labeling via nameplate

Valve Selection Matrix

Catalogs
Hygienic Valve Technology

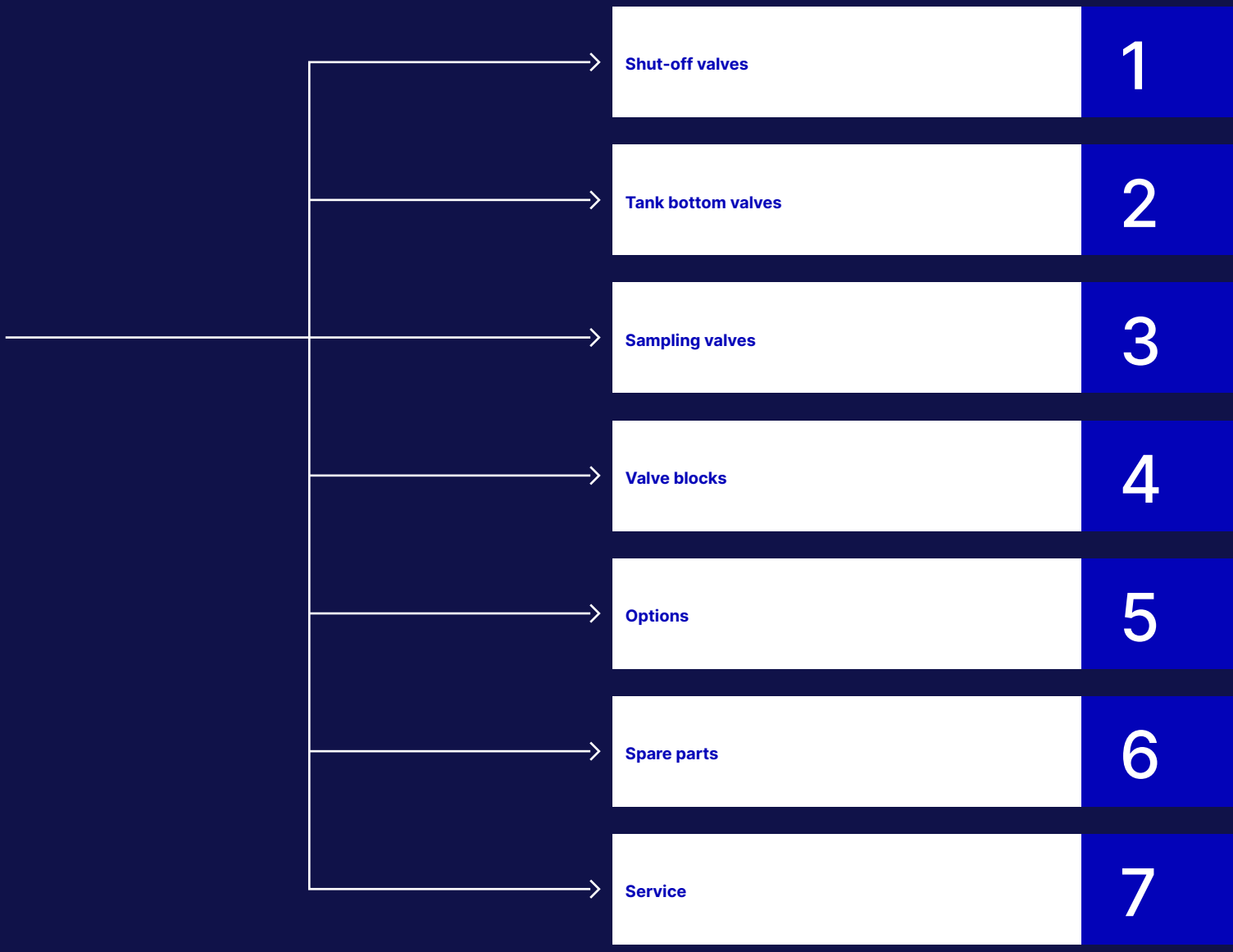
Catalogs
Hygienic Pump Technology

Catalogs
Aseptic Valve Technology → **GEA VESTA®**

Catalogs
Cleaning Technology

GEA Aseptomag®

GEA D-tec®


Shut-off valves
1
Tank bottom valves
2
Sampling valves
3
Valve blocks
4
Options
5
Spare parts
6
Service
7

1 SHUT-OFF VALVES

GEA VESTA® Sterile Valves

GEA VESTA® Shut-off Valves

GEA VESTA® Shut-off valves are used for the controlled shut-off of pipelines in sterile process technology. The modular structure allows optimum valve adaption to process requirements and capacities.

Manual actuator

Stainless steel pneumatic actuator

Housing
Housings for GEA VESTA® Shut-off valves are available with two, three or four connection ports and can be executed with either one or two housing sections.

Internal assembly
Internal assemblies for GEA VESTA® Sterile valves consist of bellow, pressure disc, o-ring and circlip. The internal assembly is screwed onto the valve stem of the actuator and is replaced as a unit if required. PTFE bellows for GEA VESTA® Shut-off valves up to DN 25, OD1" and ISO 33.7 include a tapered tip. All other valve dimensions have a regular flat seat area.

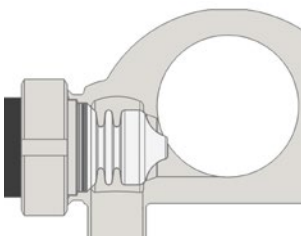
Actuator
The actuator can be executed pneumatically or manually. The manual version is made of plastic in all cases. Pneumatic actuators are available in plastic or stainless steel, and the fail-safe (normally close or normally open) position can be easily reversed.

Control and feedback system
Pneumatic actuators include a visual valve status indicator by default. Alternatively, visual indicators can be replaced by an open feedback unit or, by using the adequate adaptor plate, with a T.VIS® control and feedback system in various executions.

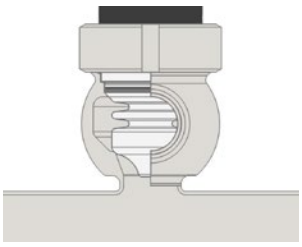
GEA VESTA® Shut-off Valves mix matched

GEA VESTA® Shut-off valves of the type HCA graduated are used for the controlled shut-off of pipelines in sterile process technology. They are used when different connection port sizes are required for transit and diversion to ideally adapt the valve to the installation. GEA VESTA® Shut-off valves of the type HCA graduated offer the seamless and cost-effective integration of GEA VESTA® Sterile valves in larger pipelines at low extraction volume. These valves can be installed in almost all orientations and provide for optimized cleaning processes. The improved piping as well as the integration of additional sterilization ports furthermore reduces dead space. The significantly reduced pipe volume on the extraction side and the improved drainability are further advantages compared to conventional solutions.

GEA VESTA® Shut-off valves type HCA graduated in various sizes



Sectional view of HCA housing graduated in excentric execution



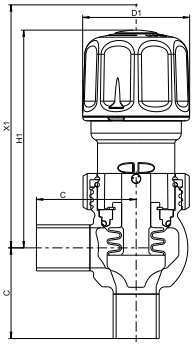
Sectional view of HCA housing graduated in centric execution

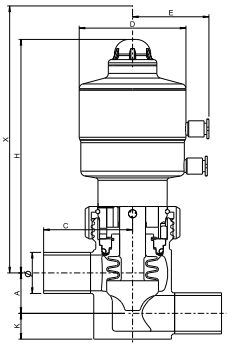
Main components
The main components as well as the available options for GEA VESTA® Shut-off valves type HCA graduated are almost identical to the regular GEA VESTA® Shut-off valves. They differentiate themselves by their valve housing options.

Housing
The housings are available in centric and eccentric executions. The eccentric option offers the full drainage of the transit pipeline in horizontal installations via the extraction port.

Housing combinations

L T B C E I





Technical data of the standard version

Material in contact with product	1.4435/316L
Material not in contact with product	Actuator 1.4301/Plastic PPS
Seal material in contact with product	PTFE
Product pressure	10 bar
Air supply pressure	NC 6 bar, NO 5 bar, AA 4 bar
External housing surface	R_a ≤ 1.6 µm metallic polished
Surface in contact with product	R_a ≤ 0.8 µm, untreated welding seam R_a ≤ 0.4 µm, grinded welding seam, e-polished
Control and feedback system	Visual monitoring (standard)
Connection fittings	Acc. to DIN 11866
Identification	Adhesive ID tag

		Pipe	Housing		Actuator						Dimension		Valve
Nominal diameter		Ø [mm]	A [mm]	C [mm]	D [mm]	D1 [mm]	E [mm]	K [mm]	H [mm]	H1 [mm]	Removal X [mm]	Removal X1 [mm]	Stroke S [mm]
DN	10	13.00 × 1.50	12.5	50	50.0	59	40.0	8.50	131.0	114	177	160	2.0
DN	15	19.00 × 1.50	18.5	50	50.0	59	40.0	11.50	134.0	118	187	171	4.0
DN	20	23.00 × 1.50	23.0	55	65.0	59	47.0	15.00	144.0	118	204	178	4.5
DN	25	29.00 × 1.50	29.5	60	77.0	59	53.0	17.50	161.0	125	230	194	5.0
DN	32	35.00 × 1.50	36.0	60	77.0	59	53.0	20.00	165.0	130	240	204	6.5
DN	40	41.00 × 1.50	52.0	90	104.0	140	71.0	26.00	254.0	141	290	210	11.5
DN	50	53.00 × 1.50	58.0	90	104.0	140	71.0	31.00	260.0	147	300	225	14.0
DN	65	70.00 × 2.00	78.0	125	169.5	180	104.0	39.00	280.0	191	330	295	18.0
DN	80	85.00 × 2.00	90.0	125	169.5	180	104.0	46.00	287.5	199	408	310	20.0
DN	100	104.00 × 2.00	110.0	125	169.5	180	104.0	56.10	305.0	218	451	350	28.0
OD	½"	12.70 × 1.65	12.5	50	50.0	59	40.0	8.80	131.0	114	177	160	2.0
OD	¾"	19.05 × 1.65	18.5	50	50.0	59	40.0	11.63	134.0	118	187	171	4.0
OD	1"	25.40 × 1.65	25.4	55	65.0	59	47.0	15.95	145.0	118	203	181	4.5
OD	1 ½"	38.10 × 1.65	51.0	90	104.0	140	71.0	23.60	253.0	139	290	210	8.5
OD	2"	50.80 × 1.65	57.0	90	104.0	140	71.0	30.25	259.0	146	300	225	11.0
OD	2 ½"	63.50 × 1.65	76.0	125	169.5	180	104.0	36.90	277.0	188	330	290	12.0
OD	3"	76.20 × 1.65	82.0	125	169.5	180	104.0	42.55	283.5	195	400	310	21.0
OD	4"	101.60 × 2.11	109.0	125	169.5	180	104.0	54.80	303.0	217	446	350	24.5
ISO	13.5	13.50 × 1.60	13.5	50	50.0	59	40.0	8.35	131.0	114	177	160	2.0
ISO	17.2	17.20 × 1.60	16.5	50	50.0	59	40.0	10.50	133.0	116	187	170	2.5
ISO	21.3	21.30 × 1.60	21.0	55	65.0	59	47.0	12.95	143.0	118	203	178	3.0
ISO	26.9	26.90 × 1.60	27.0	55	62.0	59	47.5	16.15	146.0	122	210	186	5.0
ISO	33.7	33.70 × 2.00	33.0	60	75.0	59	53.0	20.15	163.0	126	239	202	6.5
ISO	42.4	42.40 × 2.00	52.0	90	104.0	140	71.0	25.80	254.0	141	290	210	11.5
ISO	48.3	48.30 × 2.00	55.0	90	104.0	140	71.0	28.85	257.0	144	300	220	9.5
ISO	60.3	60.30 × 2.00	64.0	90	129.0	140	83.5	33.85	263.0	150	305	230	14.0
ISO	76.1	76.10 × 2.00	82.0	125	169.5	180	104.0	42.15	283.0	194	407	310	19.5
ISO	88.9	88.90 × 2.30	92.0	125	169.5	180	104.0	47.75	289.0	200	413	340	23.0
ISO	114.3	114.30 × 2.30	118.0	125	169.5	180	104.0	64.10	310.0	223	495	360	28.0

Position	Description of order code						
1	Valve type						
	H	GEA VESTA® Shut-off valve					
2	Housing combinations						
	L	T	B	C	E	I	(-) Without housing
3	Supplement to the valve type						
	A	Hermetic sealing					
4	Type of hermetic sealing						
	/P	PTFE bellow					
5/6	Nominal diameter (upper housing/lower housing)						
	DN 10	OD ½"	ISO 13.5				
	DN 15	OD ¾"	ISO 17.2				
	DN 20	OD 1"	ISO 21.3				
	DN 25	OD 1 ½"	ISO 26.9				
	DN 32	OD 2"	ISO 33.7				
	DN 40	OD 2 ½"	ISO 42.4				
	DN 50	OD 3"	ISO 48.3				
	DN 65	OD 4"	ISO 60.3				
	DN 80		ISO 76.1				
	DN 100		ISO 88.9				
			ISO 114.3				
7	Actuator type						
	P	Pneumatic actuator (plastic)					
	M	Pneumatic actuator (stainless steel)					
	H	Manual actuator (plastic)					
8	Fail-safe position						
	Z	Air-to-open/spring-to-close (NC) and manual actuator					
	A	Air-to-close/spring-to-open (NO)					
	J	Air-to-open/air-to-close (AA) [1]					
9	Surface quality						
	1	Inner surface R_a ≤ 0.8 µm, untreated welding seam, electrochemical cleaned					
	2	Inner surface R_a ≤ 0.4 µm, grinded welding seam, e-polished					
10	Connection fittings						
	N	Weld ends					
	J	With connection fittings					
11	Identification						
	52	Adhesive ID tag					
12	Certificates [2]						
	0	Without					
	Z	Certificate acc. to EN 10204 – 3.1					
	W	Certificate acc. to EN 10204 – 2.2					
	F	Delta ferrite measurement					
	O	Surface measurement protocol					
	K	FDA					
	U	USP Class VI					
13	Options [3]						
	0	Without					
+							
14–20	Control and feedback system [3]						
	000	Visual monitoring					

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

Position	1	2	3	4		5/6		7	8		10	11	11	12	13		14–20
Code	H		A	/P	-	/	-			-			52			-	0000

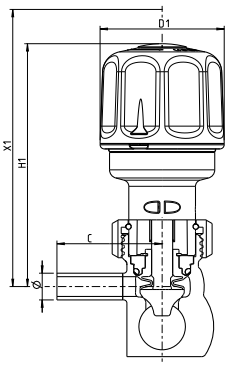
[1] Only available for DN 10–DN 32, ISO 13.5–ISO 33.7 and OD ½"–OD 1"
[2] Other certificates upon request [3] Further options see section 5, control and feedback systems - see catalog GEA Valve Automation

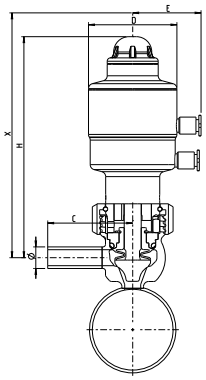
Housing combinations

C

C [1)]

E





Technical data of the standard version

Material in contact with product	1.4435/316L
Material not in contact with product	Actuator 1.4301/Plastic PPSGV40
Seal material in contact with product	PTFE
Product pressure	10 bar
Air supply pressure	NC 6 bar, NO 5 bar, AA 4 bar
External housing surface	R_a ≤ 1.6 µm metallic polished
Surface in contact with product	R_a ≤ 0.8 µm, untreated welding seam R_a ≤ 0.4 µm, grinded welding seam, e-polished
Control and feedback system	Visual monitoring (standard)
Connection fittings	Acc. to DIN 11866
Identification	Adhesive ID tag

		Pipe	Housing	Actuator					Dimension	Valve
Nominal diameter		Ø [mm]	C [mm]	D [mm]	D1 [mm]	E [mm]	H [mm]	H1 [mm]	Removal X [mm]	Removal X1 [mm]	Stroke S [mm]
DN	10	13.00 × 1.50	50	50.0	59	40.0	131.0	114	177	160	2.0
DN	15	19.00 × 1.50	50	50.0	59	40.0	134.0	118	187	171	4.0
DN	20	23.00 × 1.50	55	65.0	59	47.0	144.0	118	204	178	4.5
DN	25	29.00 × 1.50	60	77.0	59	53.0	161.0	125	230	194	5.0
DN	32	35.00 × 1.50	60	77.0	59	53.0	165.0	130	240	204	6.5
DN	40	41.00 × 1.50	90	104.0	140	71.0	254.0	141	290	210	11.5
DN	50	53.00 × 1.50	90	104.0	140	71.0	260.0	147	300	225	14.0
DN	65	70.00 × 2.00	125	169.5	180	104.0	280.0	191	330	295	18.0
DN	80	85.00 × 2.00	125	169.5	180	104.0	287.5	199	408	310	20.0
DN	100	104.00 × 2.00	125	169.5	180	104.0	305.0	218	451	350	28.0
OD	½"	12.70 × 1.65	50	50.0	59	40.0	131.0	114	177	160	2.0
OD	¾"	19.05 × 1.65	50	50.0	59	40.0	134.0	118	187	171	4.0
OD	1"	25.40 × 1.65	55	65.0	59	47.0	145.0	118	203	181	4.5
OD	1 ½"	38.10 × 1.65	90	104.0	140	71.0	253.0	139	290	210	8.5
OD	2"	50.80 × 1.65	90	104.0	140	71.0	259.0	146	300	225	11.0
OD	2 ½"	63.50 × 1.65	125	169.5	180	104.0	277.0	188	330	290	12.0
OD	3"	76.20 × 1.65	125	169.5	180	104.0	283.5	195	400	310	21.0
OD	4"	101.60 × 2.11	125	169.5	180	104.0	303.0	217	446	350	24.5
ISO	13.5	13.50 × 1.60	50	50.0	59	40.0	131.0	114	177	160	2.0
ISO	17.2	17.20 × 1.60	50	50.0	59	40.0	133.0	116	187	170	2.5
ISO	21.3	21.30 × 1.60	55	65.0	59	47.0	143.0	118	203	178	3.0
ISO	26.9	26.90 × 1.60	55	62.0	59	47.5	146.0	122	210	186	5.0
ISO	33.7	33.70 × 2.00	60	75.0	59	53.0	163.0	126	239	202	6.5
ISO	42.4	42.40 × 2.00	90	104.0	140	71.0	254.0	141	290	210	11.5
ISO	48.3	48.30 × 2.00	90	104.0	140	71.0	257.0	144	300	220	9.5
ISO	60.3	60.30 × 2.00	90	129.0	140	83.5	263.0	150	305	230	14.0
ISO	76.1	76.10 × 2.00	125	169.5	180	104.0	283.0	194	407	310	19.5
ISO	88.9	88.90 × 2.30	125	169.5	180	104.0	289.0	200	413	340	23.0
ISO	114.3	114.30 × 2.30	125	169.5	180	104.0	310.0	223	495	360	28.0

More dimensions for mix matched executions on request

Position	Description of order code			
1	Valve type			
	H	GEA VESTA® Shut-off valve (mix matched)		
2	Housing combinations			
	C	C[1]	E	(-) Without housing
3	Supplement to the valve type			
	A	Hermetic sealing		
4	Type of hermetic sealing			
	/P	PTFE bellow		
5/6	Nominal diameter (lower housing / upper housing)			
	DN 10	OD ½"	ISO 13.5	
	DN 15	OD ¾"	ISO 17.2	
	DN 20	OD 1"	ISO 21.3	
	DN 25	OD 1 ½"	ISO 26.9	
	DN 32	OD 2"	ISO 33.7	
	DN 40	OD 2 ½"	ISO 42.4	
	DN 50	OD 3"	ISO 48.3	
	DN 65	OD 4"	ISO 60.3	
	DN 80		ISO 76.1	
	DN 100		ISO 88.9	
			ISO 114.3	
7	Actuator type			
	P	Pneumatic actuator (plastic)		
	M	Pneumatic actuator (stainless steel)		
	H	Manual actuator (plastic)		
8	Fail-safe position			
	Z	Air-to-open/spring-to-close (NC) and manual actuator		
	A	Air-to-close/spring-to-open (NO)		
	J	Air-to-open/air-to-close (AA) [2]		
9	Surface quality			
	1	Inner surface R_a ≤ 0.8 µm, untreated welding seam, electrochemical cleaned		
	2	Inner surface R_a ≤ 0.4 µm, grinded welding seam, e-polished		
10	Connection fittings			
	N	Weld ends		
	J	With connection fittings		
11	Identification			
	52	Adhesive ID tag		
12	Certificates [3]			
	0	Without		
	Z	Certificate acc. to EN 10204 – 3.1		
	W	Certificate acc. to EN 10204 – 2.2		
	F	Delta ferrite measurement		
	O	Surface measurement protocol		
	K	FDA		
	U	USP Class VI		
13	Options [4]			
	0	Without		
+				
14–20	Control and feedback system [4]			
	000	Visual monitoring		

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

Position	1	2	3	4		5/6		7	8		10	11	11	12	13		14–20
Code	H		A	/P	-	/	-			-			52			-	0000

[1] Tangential execution is identified with /31 in order code [2] Only available for DN 10–DN 32, ISO 13.5–ISO 33.7 and OD ½"–OD 1" [3] Other certificates upon request [4] Further options see section 5, control and feedback systems see catalog GEA Valve Automation

2 TANK BOTTOM VALVES

GEA VESTA® Sterile Valves

GEA VESTA®
Tank Bottom Valves

GEA VESTA® Tank bottom valves are used for the controlled shut-off of liquid media at vessels. The positioning primarily takes place at the lowest point of a vessel, although the valve is also fully drainable when installed horizontally. It is characterized by its flush-mounted design, eliminating the possibility of any sump. The dead-space-free design offers the complete emptying of the vessel and optimum CIP/SIP cleaning. The robust design of the housing (respectively the housing connection flange) enables the seamless integration into processes. Due to its remarkably compact design, GEA VESTA® Tank Bottom valves can also be used in tight space conditions.

GEA VESTA® Tank Bottom valve with one-piece housing

GEA VESTA® Tank Bottom valve with loose flange

Housing connection flange (Only available for type H_A/T/F)

Housing
Housings for GEA VESTA® Tank bottom valves are available with two or three process connections. The housings are produced from one solid piece of stainless steel. The two options available are one-piece housing and flange combined or housing with loose flange. The loose flange execution consists of two parts which are connected to each other with four screws, and these are safely sealed with an additional o-ring.

Internal assembly
PTFE bellows for GEA VESTA® Tank bottom valves are executed with a flat seat area for all valve sizes. They distinguish themselves from other GEA VESTA® Valve types by their extended cone in the seat area.

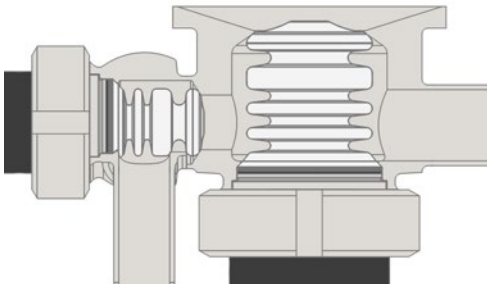
Actuator
The actuator can be executed pneumatically or manually. The manual version is made of plastic in all cases. Pneumatic actuators are available in plastic or stainless steel, and the fail-safe (normally close or normally open) position can be easily reversed.

Control and feedback system
Pneumatic actuators include a visual valve status indicator by default. Alternatively, visual indicators can be replaced by an open feedback unit or, by using the adequate adaptor plate, with a T.VIS® control and feedback system in various executions.

GEA VESTA®
Tank Bottom Valves with CIP/SIP side valve

GEA VESTA® Tank bottom valves can be executed with an additional side valve. This option impresses with its compact design and ideal cleanability, which significantly contributes to process optimization. The side valve can be used for CIP/SIP supply as well as for drainage.the improved drainability are further advantages compared to conventional solutions.

GEA VESTA® Tank Bottom valve with CIP/SIP side valve



Sectional view of **GEA VESTA®** Tank Bottom valve with CIP/SIP side valve

Housing
The valve seat of the side valve is directly integrated into the side wall of the tank bottom housing. Therefore, the additional lateral entry can be sealed free of dead space. All options available for the regular GEA VESTA® Tank bottom valves are also applicable with this solution.

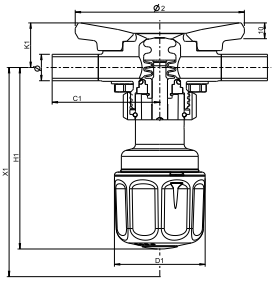
Internal assembly
The PTFE bellow for the side valve is always executed with a flat seat area, and due to the housing depth the seat area has an extended cone. In total, the bellow is therefore slightly longer than bellows for GEA VESTA® Shut-off valves and valve blocks.

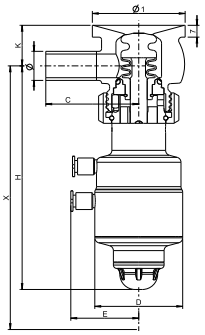
Actuator and feedback system
All options of the GEA VESTA® Valve line in terms of actuation and control are also available for the side valve. Therefore, GEA VESTA® Tank bottom valves with a side valve can ideally be adapted to process conditions.

Housing combinations

L

T





Technical data of the standard version

Material in contact with product	1.4435/316L
Material not in contact with product	Actuator 1.4301/Plastic PPSGV40
Seal material in contact with product	PTFE
Product pressure	6 bar
Air supply pressure	NC 6 bar, NO 5 bar, AA 4 bar
External housing surface	R_a ≤ 1.6 µm metallic polished
Surface in contact with product	R_a ≤ 0.8 µm, untreated welding seam R_a ≤ 0.4 µm, grinded welding seam, e-polished
Control and feedback system	Visual monitoring (standard)
Connection fittings	Weld ends acc. to DIN 11866
Identification	Adhesive ID tag

		Pipe	Flange		Housing		Actuator			Dimension						Valve
Nominal diameter		Ø [mm]	Ø1 [mm]	Ø2 [mm]	C [mm]	C1 [mm]	D [mm]	D1 [mm]	E [mm]	H [mm]	H1 [mm]	K [mm]	K1 [mm]	Removal X [mm]	Removal X1 [mm]	Stroke S [mm]
DN	10	13.00 × 1.50	54.9	110	55	70	50	59	40	131	114	26	31	177	162	3.5
DN	15	19.00 × 1.50	54.9	110	55	70	50	59	40	134	118	23	28	180	165	3.5
DN	20	23.00 × 1.50	79.9	130	65	85	65	59	47	144	118	29	34	201	176	4.5
DN	25	29.00 × 1.50	84.9	130	70	85	77	59	53	161	125	35	37	227	190	5.5
DN	32	35.00 × 1.50	84.9	130	70	85	77	59	53	163	130	35	37	230	193	5.5
DN	40	41.00 × 1.50	138.0	187	90	90	104	140	71	254	141	81	83	376	264	13.5
DN	50	53.00 × 1.50	138.0	187	90	90	104	140	71	260	147	75	77	382	270	13.5
DN	65	70.00 × 2.00	178.0	237	125	125	170	180	104	280	191	116	118	462	273	22.0
DN	80	85.00 × 2.00	178.0	237	125	125	170	180	104	287	199	109	111	469	281	22.0
DN	100	104.00 × 2.00	198.0	267	125	125	210	180	124	305	218	123	125	515	428	28.0
OD	½"	12.70 × 1.65	54.9	110	55	71	50	59	40	131	114	26	31	177	143	3.5
OD	¾"	19.05 × 1.65	54.9	110	55	70	50	59	40	134	118	23	28	187	146	3.5
OD	1"	25.40 × 1.65	79.9	130	65	83	65	59	47	145	118	28	33	208	157	4.5
OD	1 ½"	38.10 × 1.65	138.0	187	90	90	104	140	71	253	139	83	85	375	262	13.5
OD	2"	50.80 × 1.65	138.0	187	90	90	104	140	71	259	146	76	78	381	269	13.5
OD	2 ½"	63.50 × 1.65	178.0	237	125	125	170	140	104	277	118	119	121	459	370	22.0
OD	3"	76.20 × 1.65	178.0	237	125	125	170	180	104	283	195	113	115	465	377	22.0
OD	4"	101.60 × 2.11	198.0	267	125	125	210	180	124	304	217	124	126	513	427	28.0
ISO	13.5	13.50 × 1.60	54.9	110	57	71	50	59	40	131	114	26	31	177	143	3.5
ISO	17.2	17.20 × 1.60	54.9	110	55	70	50	59	40	133	116	24	29	187	145	3.5
ISO	21.3	21.30 × 1.60	79.9	130	67	83	65	59	47	143	118	30	35	203	155	4.5
ISO	26.9	26.90 × 1.60	79.9	130	66	82	65	59	47	146	122	27	32	210	158	4.5
ISO	33.7	33.70 × 2.00	84.9	130	68	84	77	59	53	163	126	33	35	239	175	5.5
ISO	42.4	42.40 × 2.00	138.0	187	90	90	104	140	71	254	141	81	83	376	264	13.5
ISO	48.3	48.30 × 2.00	138.0	187	90	90	104	140	71	257	144	87	80	379	267	13.5
ISO	60.3	60.30 × 2.00	178.0	237	125	125	170	140	104	275	150	121	123	457	368	22.0
ISO	76.1	76.10 × 2.00	178.0	237	125	125	170	180	104	283	194	113	115	465	376	22.0
ISO	88.9	88.90 × 2.30	178.0	237	125	125	170	180	104	289	200	107	109	471	382	22.0
ISO	114.3	114.30 × 2.30	198.0	267	125	125	210	180	124	310	223	119	120	519	433	28.0

Position	Description of order code		
1	Valve type		
	H	GEA VESTA® Tank Bottom valve	
2	Housing combinations [1]		
	L T	(-) Without housing	
3	Supplement to the valve type		
	A	Hermetic sealing	
4	Supplement to the housing execution		
	/T	Weld-in	
	/T/F	Flange-on	
5	Type of hermetic sealing		
	/P	PTFE bellow	
6	Nominal diameter (upper housing/lower housing)		
	DN 10	OD ½"	ISO 13.5
	DN 15	OD ¾"	ISO 17.2
	DN 20	OD 1"	ISO 21.3
	DN 25	OD 1 ½"	ISO 26.9
	DN 32	OD 2"	ISO 33.7
	DN 40	OD 2 ½"	ISO 42.4
	DN 50	OD 3"	ISO 48.3
	DN 65	OD 4"	ISO 60.3
	DN 80		ISO 88.9
	DN 100		ISO 114.3
7	Actuator type		
	P	Pneumatic actuator (plastic)	
	M	Pneumatic actuator (stainless steel)	
	H	Manual actuator (plastic)	
8	Fail-safe position		
	Z	Air-to-open/spring-to-close (NC) and manual actuator	
	A	Air-to-close/spring-to-open (NO)	
	J	Air-to-open/air-to-close (AA) [2]	
9	Surface quality		
	1	Inner surface R_a ≤ 0.8 µm, untreated welding seam, electrochemical cleaned	
	2	Inner surface R_a ≤ 0.4 µm, grinded welding seam, e-polished	
10	Connection fittings		
	N	Weld ends	
	J	With connection fittings	
11	Identification		
	52	Adhesive ID tag	
12	Certificates [3]		
	0	Without	
	Z	Certificate acc. to EN 10204 – 3.1	
	W	Certificate acc. to EN 10204 – 2.2	
	F	Delta ferrite measurement	
	O	Surface measurement protocol	
	K	FDA	
	U	USP Class VI	
13	Options [4]		
	0	Without	
+			
14–20	Control and feedback system [4]		
	000	Visual monitoring	

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

Position	1	2	3	4	5		6		7	8		9	10	11	11	12	13		14–20
Code	H		A		/P	-		-			-				52			-	0000

[1] Flange execution is to be selected on position 4 [2] Only available for DN 10–DN 32, ISO 13.5–ISO 33.7 and OD ½"–OD 1" [3] Other certificates upon request [4] Further options see section 5, control and feedback systems see catalog GEA Valve Automation

Housing combinations

L 

Position	Description of order code		
1	Valve type		
	H	GEA VESTA® Tank bottom valve (main valve)	
2	Housing combinations [1]		
	L	(-) Without housing	
3	Supplement to the valve type		
	A	Hermetic sealing	
4	Supplement to the housing execution		
	/T	Weld-in	
	/T/F	Flange-on	
5	Type of hermetic sealing		
	/P	PTFE bellow	
6	Nominal diameter		
	DN 10	OD ½"	ISO 13.5
	DN 15	OD ¾"	ISO 17.2
	DN 20	OD 1"	ISO 21.3
	DN 25	OD 1 ½"	ISO 26.9
	DN 32	OD 2"	ISO 33.7
	DN 40	OD 2 ½"	ISO 42.4
	DN 50	OD 3"	ISO 48.3
	DN 65	OD 4"	ISO 60.3
	DN 80		ISO 88.9
	DN 100		ISO 114.3
7	Actuator type		
	P	Pneumatic actuator (plastic)	
	M	Pneumatic actuator (stainless steel)	
	H	Manual actuator (plastic)	
8	Fail-safe position		
	Z	Air-to-open/spring-to-close (NC) and manual actuator	
	A	Air-to-close/spring-to-open (NO)	
	J	Air-to-open/air-to-close (AA) [2]	
9	Surface quality		
	1	Inner surface R_a ≤ 0.8 µm, untreated welding seam, electrochemical cleaned	
	2	Inner surface R_a ≤ 0.4 µm, grinded welding seam, e-polished	
10	Connection fittings		
	N	Weld ends	
	J	With connection fittings	
11	Identification		
	52	Adhesive ID tag	
12	Certificates [3]		
	0	Without	
	Z	Certificate acc. to EN 10204 – 3.1	
	W	Certificate acc. to EN 10204 – 2.2	
	F	Delta ferrite measurement	
	O	Surface measurement protocol	
	K	FDA	
	U	USP Class VI	
13	Options [4]		
	0	Without	
	/37	Pressure stage 10 bar	
+			
14–20	Control and feedback system [4]		
	000	Visual monitoring	

Position	Description of order code		
22	Valve type		
	VR	GEA VESTA® Tank bottom valve (side valve [5])	
22	Type of hermetic sealing		
	/P	PTFE bellow	
23	Nominal diameter (upper housing/lower housing)		
	DN 10	OD ½"	ISO 13.5
	DN 15	OD ¾"	ISO 17.2
	DN 20	OD 1"	ISO 21.3
	DN 25		ISO 26.9
24	Actuator type		
	P	Pneumatic actuator (plastic)	
	M	Pneumatic actuator (stainless steel)	
	H	Manual actuator (plastic)	
25	Fail-safe position		
	Z	Air-to-open/spring-to-close (NC) and manual actuator	
	A	Air-to-close/spring-to-open (NO)	
	J	Air-to-open/air-to-close (AA) [2]	
26	Pipe position [6]		
	1	45° right	
	2	45° left	
	3	Special execution	
27	Identification		
	52	Adhesive ID tag	
28	Certificates [3]		
	0	Without	
	Z	Certificate acc. to EN 10204 – 3.1	
	W	Certificate acc. to EN 10204 – 2.2	
	F	Delta ferrite measurement	
	O	Surface measurement protocol	
	K	FDA	
	U	USP Class VI	
+			
14–20	Control and feedback system [4]		
	000	Visual monitoring	

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

Position	1	2	3	4	5		6		7	8		9	10	11	11	12	13		14–20
Code	H		A		/P	-		-			-				52			-	0000

GEA VESTA® Tank Bottom valve

+

Position	21	22		23		24	25		26	27	28		14–20
Code	VR	/P	-		-	P		-		52		-	0000

[1] Flange execution is to be selected on position 4 [2] Only available for DN 10–DN 32, ISO 13.5–ISO 33.7 and OD ½"–OD 1" [3] Other certificates upon request [4] Further options see section 5, control and feedback systems see catalog GEA Valve Automation [5] The side valve execution is always in 10 bar [6] Possible with Tri-Clamp (CO) connection

3 SAMPLING VALVES

GEA VESTA® Sterile Valves

GEA VESTA® Sampling Valves

GEA VESTA® Sampling valves are used for sampling from product pipelines or vessels. GEA VESTA® Sampling valves impress with their modular structure as well as their dead-space-free and compact design. Furthermore, the optimized flow design offers an ideal basis for efficient CIP/SIP processes.

GEA **VARINLINE®** Housings

T-flange U-flange

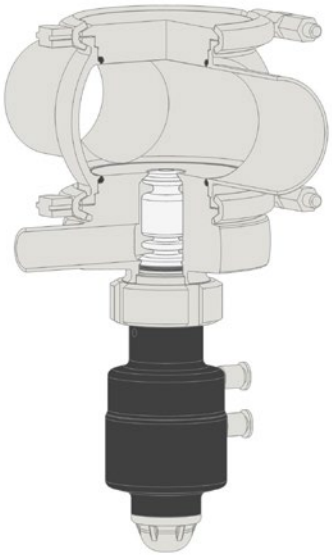
Housing
Housings for GEA VESTA® Sampling valves can either be executed with a housing connection flange or with a GEA VARINLINE® transfer housing. On the extraction side, valve housings with one (execution L) or two (execution T) connection ports are available. The connection ports on the extraction side are available in three different pipe classes and two nominal diameters each:

Pipe class		Available sizes
DIN	Pipe class DIN 11866, series A	DN 10/DN 15
OD	Pipe class ASME BPE, series C	OD 0.5"/ OD 0.75"
ISO	Pipe class DIN EN ISO 1127, series B	DN 10/DN 15

The housing connection flange is used for the flush-mounted, dead-space-free adaption of GEA VESTA® Sampling valves in the vessel wall or in the dished vessel end. The T-flange is used for installations in dished vessel ends with up to 8 mm wall thickness. The U-flange is designed for installations in vessel walls and for any wall thickness greater than 8 mm. Process integration via a GEA VARINLINE® housing can be achieved with process connections of different sizes; the housing for the process line is always designed for media transfer.

Internal assembly
The PTFE bellows for GEA VESTA® Sampling valves distinguish themselves from others by an extended cylindrical section in the seat area. Furthermore they always have a flat end towards the product pipeline.

Actuator
The actuator can be executed pneumatically or manually. The manual version is made of plastic in all cases. Pneumatic actuators are available in plastic or stainless steel, and the fail-safe (normally close or normally open) position can be easily reversed.



Sectional view of **GEA VESTA®** Sampling valve execution L with GEA VARINLINE® housing

1 Dome- and sump-free sealing of locking plate
2 Housing lock for the adaption of various instruments
3 Quick and accurate mounting with clamp
4 Various pipe fittings adaptable
5 Seamless sealing acc. to VARIVENT® principle
6 Defined o-ring swaging by metallic stop
7 Connection flange independent from nominal diamete and size of extraction port
8 Various pipe sizes in DIN, OD, ISO and IPS

Control and feedback system

Pneumatic actuators include a visual valve status indicator by default. Alternatively, visual indicators can be replaced by an open feedback unit or, by using the adequate adaptor plate, with a T.VIS® control and feedback system in various executions.

Adaption to GEA VARINLINE® housing

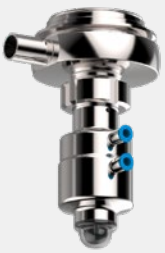
Available process connections:

Process connection	Available sizes
F DN 25	DN 25 /OD 1"/ ISO 33.7
N DN 50/40	DN 40–150 / OD 1 ½"– 6"/ ISO 42.4–114.3

The GEA VARINLINE® housing and its application

The GEA VARINLINE® housing is the universal link between measuring, control or monitoring devices and the process installation. The consequent use of GEA VARINLINE® housings provides the following advantages:

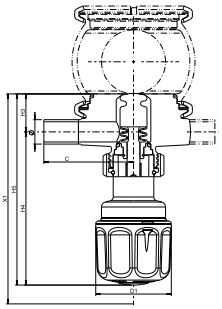
- A GEA VARINLINE® housing is available with up to two process connections. This enables the integration of two instruments or, respectively, valves in the same housing
- The targeted positioning of GEA VARINLINE® housings at critical points in a processing plant enables the retrofit of various instruments without additional welding work.
- GEA VARINLINE® housings can be used as sight glasses by applying locking plates made of glass.

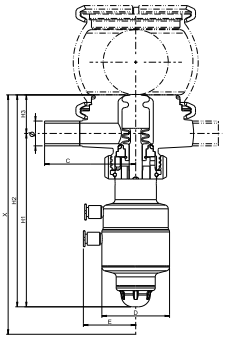


Housing combinations

L

T





Technical data of the standard version

Material in contact with product	1.4435/316L
Material not in contact with product	Actuator 1.4301/Plastic PPSGV40
Seal material in contact with product	PTFE
Product pressure	10 bar
Air supply pressure	NC 6 bar, NO 5 bar, AA 4 bar
External housing surface	R_a ≤ 1.6 µm metallic polished
Surface in contact with product	R_a ≤ 0.8 µm, untreated welding seam R_a ≤ 0.4 µm, grinded welding seam, e-polished
Control and feedback system	Visual monitoring (standard)
Connection fittings	Acc. to DIN 11866
Identification	Adhesive ID tag

		Pipe	Housing	Actuator			Dimensions							
Nominal diameter		Ø [mm]	C [mm]	D [mm]	D1 [mm]	E [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	Removal X [kg]	Removal X1 [kg]	Valve lift [mm]
DN	10	13.00 × 1.50	60	50	59	40	130	163	29.5	113	146	187	198	3.6
DN	15	19.00 × 1.50	60	50	59	40	133	163	32.5	116	146	197	208	3.6
OD	½"	12.70 × 1.65	60	50	59	40	130	163	29.5	113	146	187	198	3.6
OD	¾"	19.05 × 1.65	60	50	59	40	133	163	32.5	116	146	197	208	3.6
ISO	13.5	13.50 × 1.60	60	50	59	40	130	163	29.5	113	146	187	198	3.6
ISO	17.2	17.20 × 1.60	60	50	59	40	133	163	32.5	116	146	197	208	3.6

Position	Description of order code		
1	Valve type		
	H	GEA VESTA® Sampling valve	
2	Housing combinations		
	L T	(-) Without housing	
3	Supplement to the valve type		
	A	Hermetic sealing	
4	Supplement to the housing execution		
	/I/F	For nominal diameters DN 25/32, ISO 33.7	
	/I/N	For nominal diameters DN 40/50, ISO 42.5/48.3/60.3, OD 1 ½"/2"	
	/I/S	For nominal diameters DN 65/80, OD 2.5"/3"	
5	Type of hermetic sealing		
	/P	PTFE bellow	
6	Nominal diameter (upper housing/lower housing)		
	DN 10	OD ½"	ISO 13.5
	DN 15	OD ¾"	ISO 17.2
7	Actuator type		
	P	Pneumatic actuator (plastic)	
	M	Pneumatic actuator (stainless steel)	
	H	Manual actuator (plastic)	
8	Fail-safe position		
	Z	Air-to-open/spring-to-close (NC) and manual actuator	
	A	Air-to-close/spring-to-open (NO)	
9	Surface quality		
	1	Inner surface R_a ≤ 0.8 µm, untreated welding seam, electrochemical cleaned	
	2	Inner surface R_a ≤ 0.4 µm, grinded welding seam, e-polished	
10	Connection fittings		
	N	Weld ends	
	J	With connection fittings	
11	Identification		
	52	Adhesive ID tag	
12	Certificates [1]		
	0	Without	
	Z	Certificate acc. to EN 10204 – 3.1	
	W	Certificate acc. to EN 10204 – 2.2	
	F	Delta ferrite measurement	
	O	Surface measurement protocol	
	K	FDA	
	U	USP Class VI	
13	Options [2]		
	0	Without	
	/37	Pressure stage 10 bar	
+			
14–20	Control and feedback system [2]		
	000	Visual monitoring	

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

Position	1	2	3	4		5	6		7	8		9	10	11	11	12	13		14–20
Code	H		A		-	/P		-			-				52			-	0000

[1] Other certificates upon request [2] Further options see section 5, control and feedback systems - see catalog GEA Valve Automation

4 VALVE BLOCKS

GEA VESTA® Sterile Valves


TOP

GEA VESTA® Valve Blocks

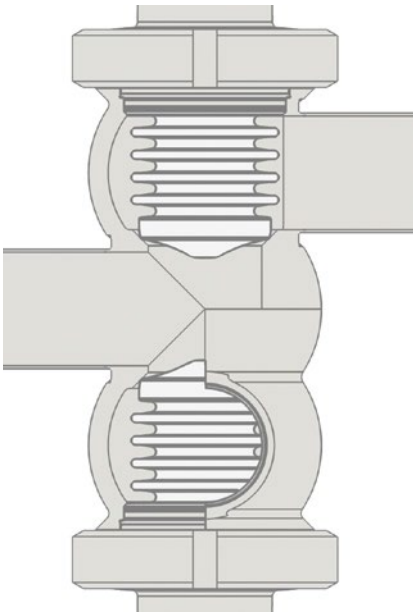
GEA VESTA® Valve Block
type HWA

GEA VESTA® Valve Block
type HXA

GEA VESTA® Valve Blocks are compact and versatile sterile valves with two independent actuators. The concept of the singlepiece housing enables merging, separating or diverting of product flow in tight space conditions.

GEA VESTA® Valve Blocks offer optimized piping by simultaneously reducing dead spaces. The significantly reduced pipe volume and the improved drainability are other characteristic features. In contrast to concepts with individual valves, solutions with GEA VESTA® Valve Blocks reduce the required quantity of fittings and therefore also contribute to economical installation concepts.

With GEA VESTA® Valve Blocks a number of various applications can be achieved either as an individual valve block or with multiple valve blocks for complex product distribution tasks.



Sectional view of **GEA VESTA®** Valve Block type HWA

Housing
GEA VESTA® Valve Blocks are available with three (type HWA) or four (type HXA) connection ports by default. With the type HXA the intermediate chamber is executed for media transfer. The single-piece housing includes three sections and is produced from one solid piece. Further housing configurations are available upon request.

Internal assembly
The PTFE bellows are identical with those for GEA VESTA® Shut-off valves. Bellows up to DN25, OD 1" and ISO 33.7 include a tapered tip. All other valve dimensions include a regular flat seat area.

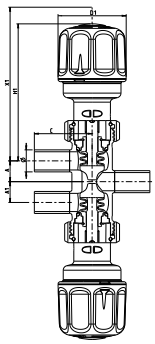
Actuator
Both actuators can be executed pneumatically or manually. The manual version is made of plastic in all cases. Pneumatic actuators are available in plastic or stainless steel, and the fail-safe (normally close or normally open) position can be easily reversed. Differential configurations of the two actuators are possible.

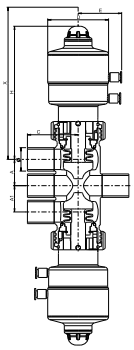
Control and feedback system
Pneumatic actuators include a visual valve status indicator by default. Alternatively, visual indicators can be replaced by an open feedback unit or by using the adequate adaptor plate with a T.VIS® control and feedback system in various executions.

Housing combinations

W

X





Technical data of the standard version

Material in contact with product	1.4435/316L
Material not in contact with product	Actuator 1.4301/Plastic PPSGV40
Seal material in contact with product	PTFE
Product pressure	10 bar
Air supply pressure	NC 6 bar, NO 5 bar, AA 4 bar
External housing surface	R_a ≤ 1.6 µm metallic polished
Surface in contact with product	R_a ≤ 0.8 µm, untreated welding seam R_a ≤ 0.4 µm, grinded welding seam, e-polished
Control and feedback system	Visual monitoring (standard)
Connection fittings	Weld ends acc. to DIN 11866
Identification	Adhesive ID tag

		Pipe	Housing			Actuator			Dimension			Valve
Nominal diameter		Ø [mm]	A [mm]	A1 [mm]	C [mm]	E [mm]	D [mm]	D1 [mm]	H [mm]	H1 [mm]	Removal X [mm]	Removal X1 [mm]	Stroke S [mm]
DN	10	13.00 × 1.50	17.40	13.00	50	40.0	50.0	59	131.0	114.0	177	160	2.0
DN	15	19.00 × 1.50	18.30	18.30	50	40.0	50.0	59	134.0	118.0	187	171	4.0
DN	20	23.00 × 1.50	23.60	23.60	55	47.0	65.0	59	144.0	118.0	204	178	4.5
DN	25	29.00 × 1.50	29.50	29.50	60	53.0	77.0	59	161.0	125.0	230	194	5.0
DN	32	35.00 × 1.50	36.00	36.00	60	53.0	77.0	59	165.0	130.0	240	204	6.5
DN	40	41.00 × 1.50	52.00	52.00	90	71.0	104.0	140	254.0	141.0	290	210	11.5
DN	50	53.00 × 1.50	58.00	58.00	90	71.0	104.0	140	260.0	147.0	300	225	13.5
DN	65	70.00 × 2.00	78.00	78.00	125	170.0	169.0	180	280.0	191.0	330	295	18.0
DN	80	85.00 × 2.00	90.00	90.00	125	104.0	169.0	180	287.5	199.0	408	310	20.0
DN	100	104.00 × 2.00	110.00	110.00	125	104.0	169.0	180	305.0	218.0	451	350	28.0
OD	½"	12.70 × 1.65	17.80	11.80	50	40.0	50.0	59	131.0	114.0	177	160	2.0
OD	¾"	19.05 × 1.65	18.00	18.00	50	40.0	50.0	59	134.0	118.0	187	171	4.0
OD	1"	25.40 × 1.65	28.50	28.50	55	47.0	65.0	59	145.0	118.0	203	181	4.5
OD	1 ½"	38.10 × 1.65	51.00	51.00	90	71.0	104.0	140	253.0	139.0	290	210	8.5
OD	2"	50.80 × 1.65	57.00	57.00	90	71.0	104.0	140	259.0	146.0	300	225	11.0
OD	2 ½"	63.50 × 1.65	76.00	76.00	125	104.0	169.5	180	277.0	188.0	330	290	12.0
OD	3"	76.20 × 1.65	82.00	82.00	125	104.0	169.5	180	283.0	283.5	400	310	21.0
OD	4"	101.60 × 2.11	109.00	109.00	125	104.0	169.5	180	304.0	217.0	446	350	24.5
ISO	13.5	13.50 × 1.60	17.05	13.35	50	40.0	50.0	59	131.0	114	177	160	2.0
ISO	17.2	17.20 × 1.60	18.90	17.10	50	40.0	50.0	59	133.0	116	187	170	2.5
ISO	21.3	21.30 × 1.60	21.80	21.80	55	47.0	65.0	59	143.0	118	203	178	3.0
ISO	26.9	26.90 × 1.60	29.90	29.90	55	47.5	62.0	59	146.0	122	210	186	5.0
ISO	33.7	33.70 × 2.00	33.30	33.30	60	53.0	75.0	59	163.0	126	239	202	6.5
ISO	42.4	42.40 × 2.00	52.00	52.00	90	71.0	104.0	140	254.0	141	290	210	11.5
ISO	48.3	48.30 × 2.00	55.00	55.00	90	71.0	104.0	140	257.0	144	300	220	8.5
ISO	60.3	60.30 × 2.00	64.00	64.00	90	83.5	129.0	140	263.0	150	305	230	14.0
ISO	76.1	76.10 × 2.00	81.80	81.80	125	104.0	169.5	180	283.0	223	407	310	19.5
ISO	88.9	88.90 × 2.30	92.00	92.00	125	104.0	169.5	180	289.0	200	413	340	23.0
ISO	114.3	114.30 × 2.30	118.00	118.00	125	104.0	169.5	180	310.0	223	495	360	28.0

Position	Description of order code		
1	Valve type		
	H	GEA VESTA® Valve Block	
2	Housing combinations		
	W X	(-) Without housing	
3	Supplement to the valve type		
	A	Hermetic sealing	
4	Type of hermetic sealing		
	/P	PTFE bellow	
5/6	Nominal diameter (upper housing/lower housing)		
	DN 10	OD ½"	ISO 13.5
	DN 15	OD ¾"	ISO 17.2
	DN 20	OD 1"	ISO 21.3
	DN 25	OD 1 ½"	ISO 26.9
	DN 32	OD 2"	ISO 33.7
	DN 40	OD 2 ½"	ISO 42.4
	DN 50	OD 3"	ISO 48.3
	DN 65	OD 4"	ISO 60.3
	DN 80		ISO 76.1
	DN 100		ISO 88.9
			ISO 114.3
7	Actuator type		
	P	Pneumatic actuator (plastic)	
	M	Pneumatic actuator (stainless steel)	
	H	Manual actuator (plastic)	
8	Fail-safe position		
	Z	Air-to-open/spring-to-close (NC) and manual actuator	
	A	Air-to-close/spring-to-open (NO)	
	J	Air-to-open/air-to-close (AA) [1]	
9	Surface quality		
	1	Inner surface R_a ≤ 0.8 µm, untreated welding seam, electrochemical cleaned	
	2	Inner surface R_a ≤ 0.4 µm, grinded welding seam, e-polished	
10	Connection fittings		
	N	Weld ends	
	J	With connection fittings	
11	Identification		
	52	Adhesive ID tag	
12	Certificates [2]		
	0	Without	
	Z	Certificate acc. to EN 10204 – 3.1	
	W	Certificate acc. to EN 10204 – 2.2	
	F	Delta ferrite measurement	
	O	Surface measurement protocol	
	K	FDA	
	U	USP Class VI	
13	Options [4]		
	0	Without	
	/37	Pressure stage 10 bar	
+			
14–20	Control and feedback system [3]		
	000	Visual monitoring	

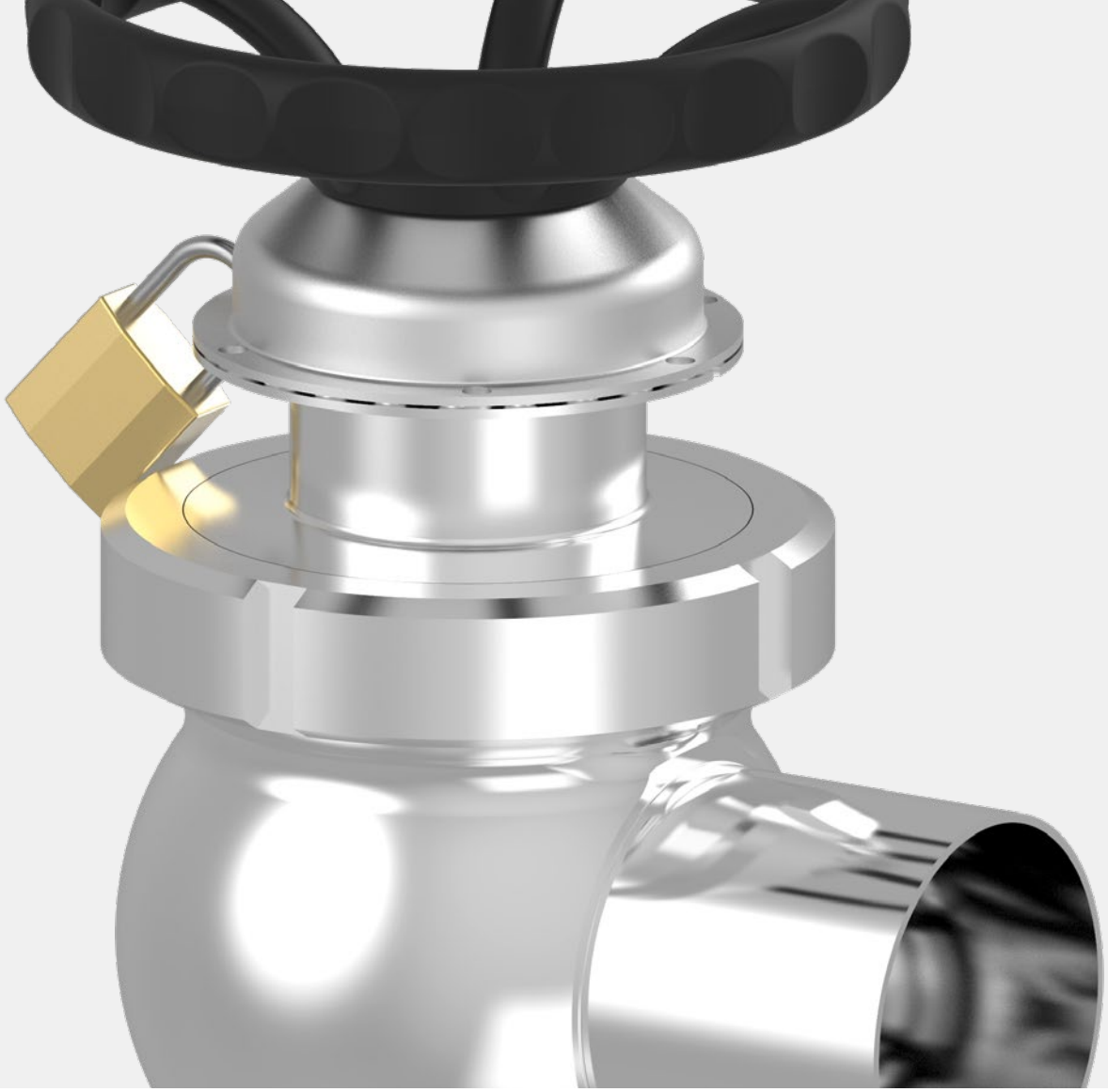
The code is composed as follows, depending on the chosen configuration:

Position	1	2	3	4		5/6		7	8		9	10	11	12	13		14–20
Code	H		A	/P	-		-			-			52			-	0000

[1] Only available for DN 10–DN 32, ISO 13.5–ISO 33.7 and OD ½"–OD 1"
[2] Other certificates upon request [3] Further options see section 5, control and feedback systems - see catalog GEA Valve Automation

5 OPTIONS

GEA VESTA® Sterile Valves



Handle

Description

The handle is used for manual operation of pneumatic GEA VESTA® Valves equipped with a stainless steel actuator. This option is used in case of power loss as well as maintenance and assembly work. The use of control and feedback systems in combination with this handle is not possible.

Technical data	
Material	1.4301

Item	Nominal diameter	Part number
Handle for stainless steel actuators	DN 10 – DN 20 OD 0.5"– OD 0.75" ISO 13.5 – ISO 21.3	221-003067
Handle for stainless steel actuators	DN 25 – DN 32 OD 1" ISO 26.9 – ISO 33.7	221-003068

Available for valve types
GEA VESTA® Shut-off Valves
GEA VESTA® Tank Bottom Valves
GEA VESTA® Valve Blocks
GEA VESTA® Sampling Valves

Integration of option into order code

Position	Description of Order Code	
13	/29	Handle

Position	1	2	3	4		5/6		7	8		9	10	11	12	13		14–20
Code	H		A	/P	-	/	-			-					/29	+	000

Stroke Limiter

Description

The stroke of the valve can be regulated by means of an adjusting sleeve. The stroke limitation limits either the opening or closing stroke of the valve. It is screwed onto the pneumatic actuator during assembly and is equipped with a visual status indicator. The use of other control and feedback systems in combination with stroke limiters is not possible.

Technical data	
Material	1.4301
Adjustment	Stroke OPEN / Stroke CLOSED

Item	Nominal diameter	Part number
Stroke Limiter OPEN	DN 10 – DN 32 OD 0.5"– OD 1" ISO 13.5 – ISO 33.7	221-001379
Stroke Limiter CLOSED	DN 10 – DN 32 OD 0.5"– OD 1" ISO 13.5 – ISO 33.7	221-001382
Stroke Limiter OPEN	DN 40 – DN 100 OD 1.5"– OD 4" ISO 42.4 – ISO 114.3	221-005206

Available for valve types
GEA VESTA® Shut-off Valves
GEA VESTA® Tank Bottom Valves
GEA VESTA® Valve Blocks
GEA VESTA® Sampling Valves

Integration of option into order code

Position		Description of Order Code	
13		/20	Stroke Limiter OPEN
		/21	Stroke Limiter CLOSED

Position	1	2	3	4		5/6		7	8		9	10	11	12	13		14–20
Code	H		A	/P	-	/	-			-					/20	+	000

LoTo – Lock out, Tag out – Valves up to DN 32

Description
The LoTo device is used to increase safety in a processing plant during maintenance. This version here can be installed on valves from DN 10 to DN 32 and corresponding sizes of other piping standards. With a slight pressure on the cap, a positive connection to the handwheel is established and the valve can be closed / opened. The valves can only be locked in closed position.

Technical data	
Material	PP-GF 30

Available for valve types
GEA VESTA® Shut-off Valves
GEA VESTA® Tank Bottom Valves
GEA VESTA® Valve Blocks
GEA VESTA® Sampling Valves

Integration into the order code and example as retrofit kit

Position	Description of order code	
1	AV LoTo	
2	LoTo type	
	BL	BELLOW LOCK
3	Valve family	
	GEA VESTA	GEA VESTA® valves
4	Actuator type	
	M	Manual
5	Nominal width	
	DN 10 – DN 32	

Position	1		2		3		4		5
Code	AV LoTo	-		-		-		-	

Integration of option into order code and example for components

Position	Description of Order Code	
13	/35	LockOut – TagOut

Position	1	2	3	4		5/6		7	8		9	10	11	12	13		14–20
Code	H		A	/P	-	/	-			-					/35	+	000

LoTo – Lock out, Tag out – Valves from DN 40

Description

The LoTo device is used to increase safety in a processing plant during maintenance. This version here can be installed on valves from DN 40 to DN 100 and corresponding sizes of other piping standards. There are two options available, one fitted to the manual GEA VESTA® Valves with stainless steel lantern and the other for valves with a plastic lantern. If GEA VESTA® Valves are already in use, a retrofit kit is available. The valves can be locked in any position.

Technical data	
Material clamp sleeve	1.4305
Material clamp sleeve (plastic lantern)	1.4301
Material clamp sleeve (stainless steel lantern)	1.4305
Material cap	1.4301

Available for valve types
GEA VESTA® Shut-off Valves
GEA VESTA® Tank Bottom Valves
GEA VESTA® Valve Blocks

Integration into the order code and example as retrofit kit

Position	Description of order code	
1	AV LoTo	
2	LoTo type	
	BL	BELLOW LOCK
3	Valve family	
	GEA VESTA	GEA VESTA® valves
4	Actuator type	
	M	Manual
5	Nominal width	
	DN 40 – DN 50	
	DN 65 – DN 100	
6	Lantern execution (only for DN 40 and DN 50)	
	S	Stainless steel
	P	Plastic

Position	1		2		3		4		5		6
Code	**AV LoTo**	-		-		-		-		-	

Integration of option into order code and example for components

Position	Description of Order Code	
13	/35	LockOut – TagOut

Position	1	2	3	4		5/6		7	8		9	10	11	12	13		14–20
Code	H		A	/P	-	/	-			-					/35	+	000

GEA VARINLINE® Housing

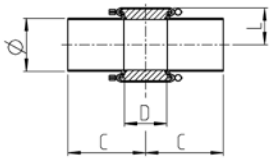
Description

The in-line housing, usually with double vertical ports, permits hygienic holding of up to two in-line measurement and control instruments free of dead zones via process connections.

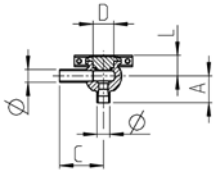
Technical Data of standard version		
Material in contact with product	DN 10 – 15, ISO	1.4435 (AISI 316L)
	From DN 25, OD, IPS	1.4404 (AISI 316L)
Seal material in contact with the product	EPDM, FKM, HNBR	
Product pressure	DN 10 – 65, OD 1" – 2 ½", IPS 2", ISO 13.5 – 60.3	16 bar
	DN 80 – 150, OD 3" – 6", IPS 3" – 6", ISO 76.1 – 114.3	10 bar
Surface in contact with the product	DN, OD, ISO	R_a ≤ 0.8 µm
	IPS	R_a ≤ 1.2 µm
External housing surface	Matte blasted	
Connection fittings	Weld ends	
Certificates	FDA	

				Pipe				Dimension	
Nominal diameter		Process connection	Housing design	Ø [mm]	A [mm]	B [mm]	C [mm]	D [mm]	L [mm]
DN	10	B	L, T, G	13.00 × 1.50	40	8.50	65.0	31	26.0
DN	15	B	L, T, G	19.00 × 1.50	40	11.50	65.0	31	29.0
DN	25	F	–	29.00 × 1.50	–	–	90.0	50	30.0
DN	40	N	–	41.00 × 1.50	–	–	90.0	68	36.0
DN	50	N	–	53.00 × 1.50	–	–	90.0	68	42.0
DN	65	N	–	70.00 × 2.00	–	–	125.0	68	50.0
DN	80	N	–	85.00 × 2.00	–	–	125.0	68	57.5
DN	100	N,G*	–	104.00 × 2.00	–	–	125.0	68*	67.0
DN	125	N,G*	–	129.00 × 2.00	–	–	125.0	68*	79.5
DN	150	N,G*	–	154.00 × 2.00	–	–	150.0	68*	92.0
OD	1"	F	–	25.40 × 1.65		131.0	90.0	50	28.0
OD	1 ½"	N	–	38.10 × 1.65		145.0	90.0	68	34.5
OD	2"	N	–	50.80 × 1.65		253.0	90.0	68	40.8
OD	2 ½"	N	–	63.50 × 1.65		259.0	125.0	68	47.0
OD	3"	N	–	76.20 × 1.65		277.0	125.0	68	53.5
OD	4"	N,G*	–	101.60 × 2.11		283.0	125.0	68*	65.8
OD	6"	N,G*	–	152.40 × 2.77		304.0	125.0	68*	90.5
IPS	2"	N	–	60.30 × 2.00	–	–	114.3	68	45.5
IPS	3"	N	–	88.90 × 2.30	–	–	152.4	68	59.5
IPS	4"	N,G*	–	114.30 × 2.30	–	–	152.4	68*	72.0
IPS	6"	N,G*	–	168.30 × 2.77	–	–	152.4	68*	98.0
ISO	13.5	B	L, T, G	13.50 × 1.60	40	8.35	65.0	31	25.5
ISO	17.2	B	L, T, G	17.20 × 1.60	40	11.50	65.0	31	27.5
ISO	21.3	B	L, T, G	21.30 × 1.60	40	13.50	65.0	31	29.5
ISO	33.7	F	–	33.70 × 2.00	–	–	114.3	50	32.0
ISO	42.4	N	–	42.40 × 2.00	–	–	114.3	68	36.3
ISO	48.3	N	–	48.30 × 2.00	–	–	114.3	68	39.3
ISO	60.3	N	–	60.30 × 2.00	–	–	114.3	68	45.5
ISO	76.1	N	–	76.10 × 2.00	–	–	152.4	68	53.5
ISO	88.9	N	–	88.90 × 2.30	–	–	152.4	68	59.5
ISO	114.3	N	–	114.30 × 2.30	–	–	152.4	68	72.0

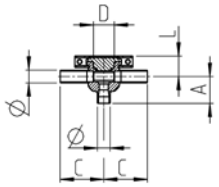
* Process connection G only available with a sight glass. The dimension D is 123 mm.



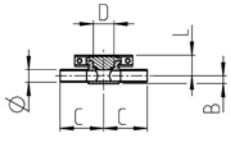
Standard Housing Design -



Housing design L



Housing design T



Housing design G

Position	Description of order code		
1	GEA VARINLINE® System		
	T	GEA VARINLINE® housing	
2	Nominal diameter (upper housing/lower housing)		
	DN 10		ISO 13.5
	DN 15		ISO 17.2
	DN 25	OD 1"	ISO 21.3
	DN 40	OD 1 ½"	ISO 33.7
	DN 50	OD 2"	ISO 42.4
	DN 65	OD 2 ½"	ISO 48.3
	DN 80	OD 3"	ISO 60.3
	DN 100	OD 4"	ISO 76.1
	DN 125		ISO 88.9
	DN 150	OD 6"	ISO 114.3
3	Housing design (only for DN 10, DN 15, ISO 13.5, ISO 17.2 and ISO 21.3)		
	L		
	T		
	G		
4	Blanking plates		
	1	Without blanking plate	
	2	With one blanking plate 1.4404 (AISI 316L)	
	3	With two blanking plates 1.4404 (AISI 316L)	
	4	With one blanking plate 1.4435 cert. 3.1	
	5	With two blanking plates 1.4435 cert. 3.1	
5	Sealing material		
	1	EPDM	
	2	FKM	
	3	HNBR	
	4	FFKM	
	5	PTFE	
6	Surface quality of the housing		
	1	Inside R_a ≤ 1.2 µm, outside matte blasted (IPS)	
	2	Inside R_a ≤ 0.8 µm, outside matte blasted (DN, ISO, OD)	
7	Certificates		
	K	Without	
	A	Certificate acc. to EN 10204 – 3.1/AD2000W2	
	M	Certificate acc. to EN 10204 – 3.1 and 2.2	
	W	Certificate acc. to EN 10204 – 2.2	
	Z	Certificate acc. to EN 10204 – 3.1	
8	Language of the documentation		
	D	German	
	E	English	
9	Number of documentation		
	1	Single documentation	
	...	The number of documentations corresponds to their entered number	
10	Connection fittings		
	N	Weld ends	
11	Material of the housing		
	1.4404	1.4404 (AISI 316L)	
	1.4435	1.4435 (AISI 316L) [1]	
12	Options [2]		

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

Position	1	2	3		4	5	6	7	8	9	10	11	12
Code	T			-							N		N

[1] Standard material for Housings DN 10, DN 15 and ISO. Optionally also available for metric housings up to DN 100 and OD 4"
[2] More options see catalog Hygienic Valves and Components, section 1

6 SPARE PARTS

GEA VESTA® Sterile Valves

Overview

Bellow unit
The bellow is a typical wear part and is offered as a unit including all surrounding components for easy and quick replacement. Further information on the common bellows can be found on the following pages.

Valve insert
A valve insert contains actuator and bellow as well as the selected type of valve feedback/control, if applicable. Since the actuator is by definition not a wear part but a spare part, a valve insert is also considered a spare part. Valve inserts can be configured via the regular valve order code, where for the housing combination "without housing" must be selected.

Bellow unit

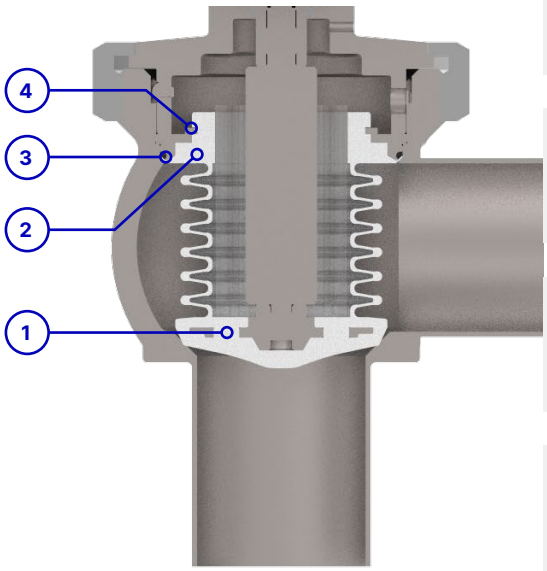
Valve insert

Seal kit for actuator
The different seals in the actuator are also considered wear parts, but unlike the bellow they are not in contact with the product and are therefore subject to lower loads. The number and type of seals included in the seal kit vary depending on the actuator type. Further information on the different seal kits can be found in the respective spare parts lists.

Other spare parts
Notes and information on other spare parts such as housings can also be found in the corresponding spare parts lists.

Bellow Units

Components of a PTFE bellow unit
The adjacent illustration of a GEA VESTA® Shut-off valve type H_A shows an example of the composition of a bellow unit for shut-off valves and valve blocks.
Essentially, a bellow unit includes all the wear parts of a valve that come into contact with the product, as well as the components required to replace the unit quickly.
Information on maintenance can be found in the associated operating instructions.



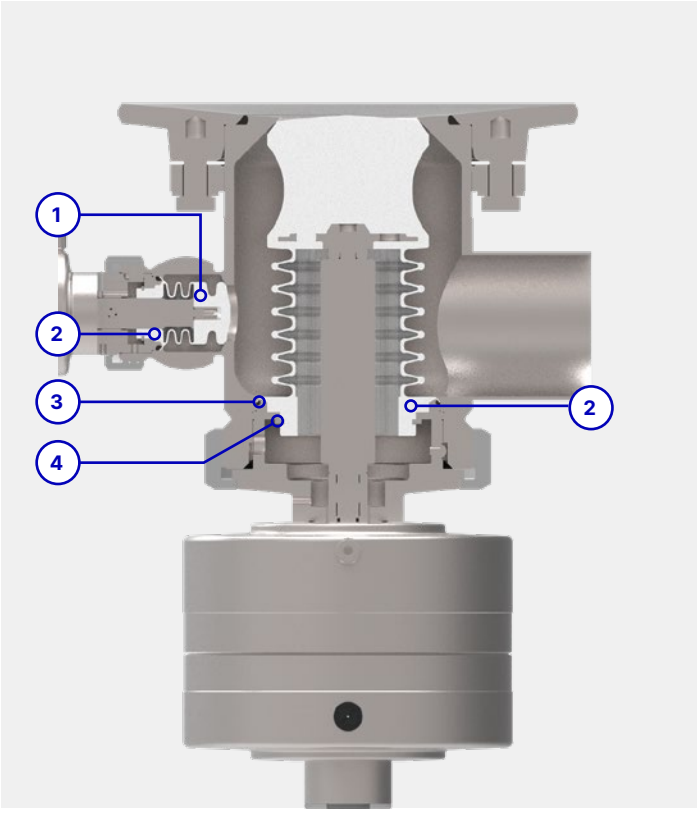
Components of a PTFE bellow unit using the example of a GEA VESTA® Shut-off valve type H_A
1 Bellow
2 Pressure disk
3 O-Ring
4 Circlip

GEA VESTA® Shut-off valves and Valve blocks

Nominal diameter			PTFE/EPDM	
DN	**OD**	**ISO**	**10 bar**	**10 bar, ATEX**
10	½"	13.5	221-004640	221-004640
15	¾"	–	221-004641	221-004641
–	–	17.2	221-001282	221-001282
20	–	21.3	221-001276	221-001276
–	1"	–	221-004642	221-004642
25	–	–	221-001277	221-001277
–	–	26.9	221-001284	221-001284
32	–	–	221-003216	221-003216
–	–	33.7	221-001285	221-001285
40	1 ½"	42.4	221-540.16	221-540.16
50	2"	48.3	221-547.17	221-547.60
–	–	60.3	221-547.31	–
65	2½"	–	221-540.18	221-547.61
–	3"	76.1	221-547.20	221-547.62
80	–	–	221-547.19	–
–	–	88.9	–	–
100	4"	–	221-547.21	221-547.63
–	–	114.3	221-547.33	–

Bellow Units

Components of a PTFE bellow unit
The adjacent illustration of a GEA VESTA® Tank Bottom valve type H_A/T with lateral CIP/SIP application shows an example of the composition of a bellow unit for tank bottom valves.
Essentially, a bellow unit includes all the wear parts of a valve that come into contact with the product, as well as the components required to replace the unit quickly.
Information on maintenance can be found in the associated operating instructions.



Components of a PTFE bellow unit using the example of a GEA VESTA® Tank Bottom valve type H_A/T with CIP/SIP application
1 Bellow
2 Pressure disk
3 O-Ring
4 Circlip

GEA VESTA® Tank Bottom valve

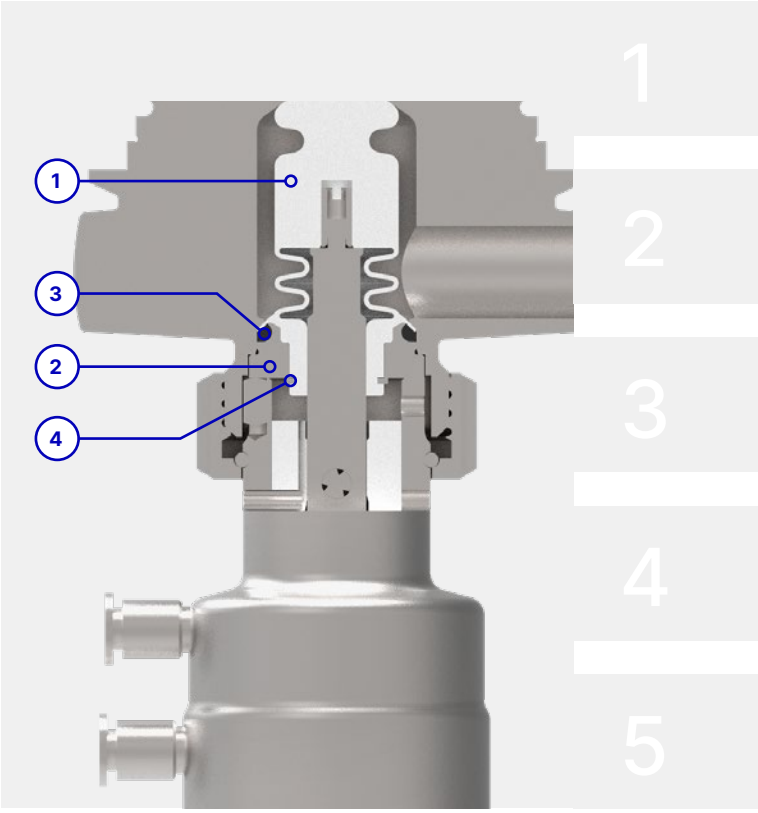
Nominal diameter			PTFE/EPDM
DN	OD	ISO	6 bar
10	½"	13.5	221-002056
15	¾"	17.2	221-002056
20	1"	21.3	221-002057
25	–	–	221-002058
–	–	26.9	221-002057
32	–	–	221-002058
40	1½"	42.4	221-559.06
50	2"	48.3	221-559.06
65	2½"	60.3	221-559.07
80	3"	76.1	221-559.07
–	–	88.9	221-559.07
100	4"	114.3	221-559.08

GEA VESTA® CIP/SIP Side valve

Nominal diameter			PTFE/EPDM	
DN	OD	ISO	6 bar	6 bar, ATEX
10	½"	13.5	221-002056	221-002056
15	¾"	17.2	221-002056	221-002056
20	1"	21.3	221-002057	221-002057
25	–	–	221-002058	221-002058

Bellow Units

Components of a PTFE bellow unit
The adjacent illustration of a GEA VESTA® Sampling valve type H_A/I shows an example of the composition of a bellow unit for sampling valves.
Essentially, a bellow unit includes all the wear parts of a valve that come into contact with the product, as well as the components required to replace the unit quickly. Information on maintenance can be found in the associated operating instructions.

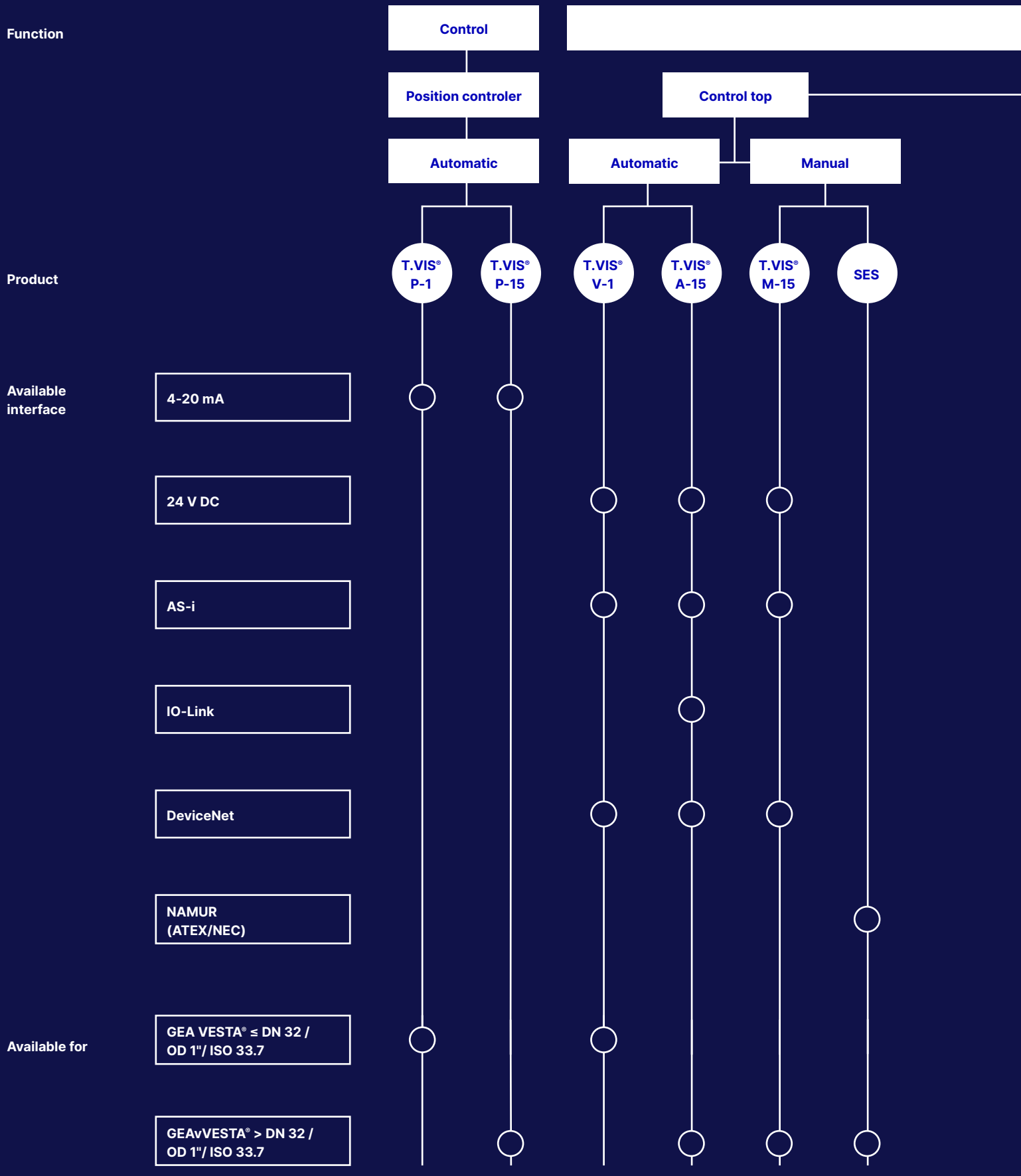


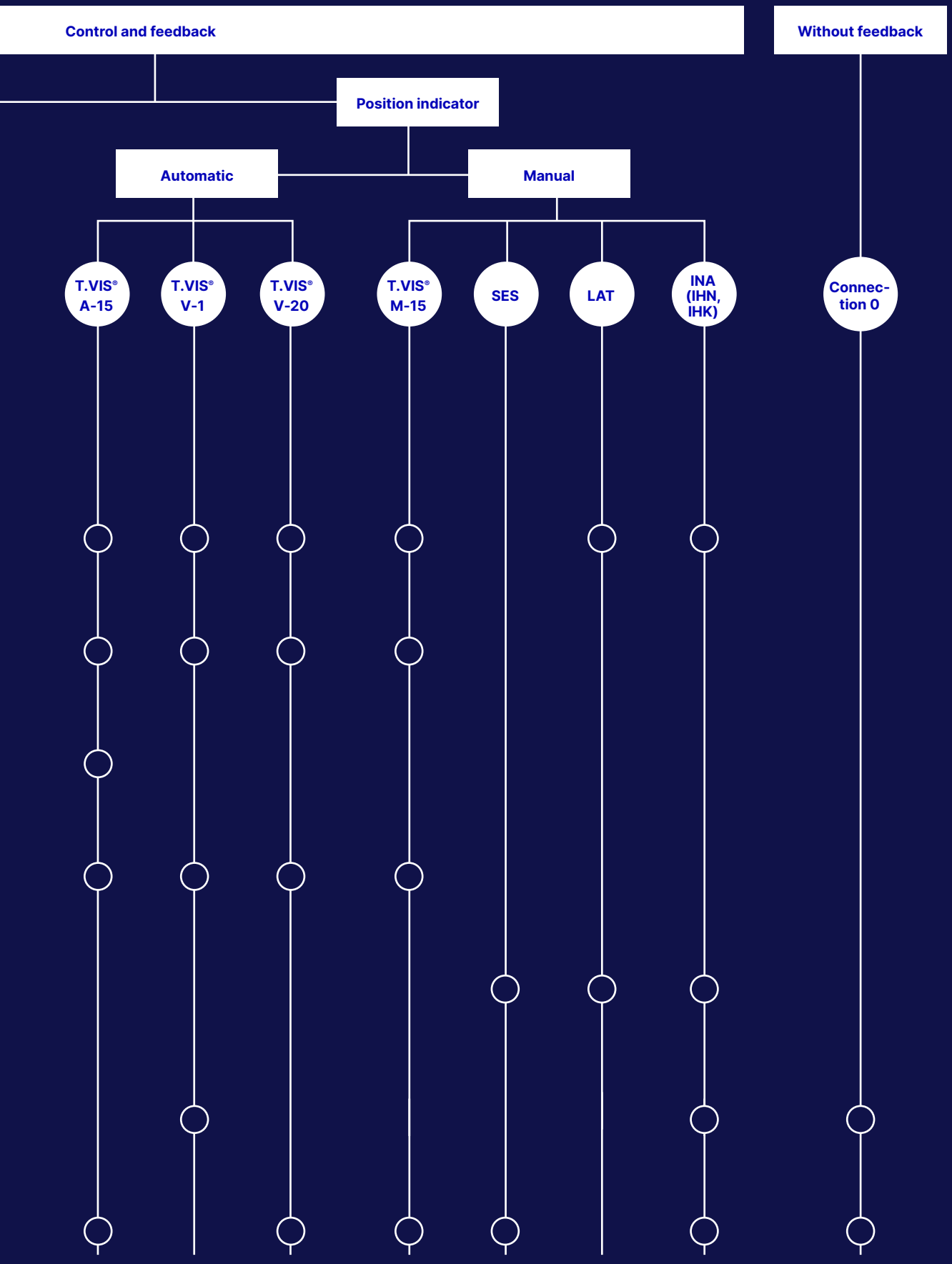
Components of a PTFE bellow unit using the example of a GEA VESTA® Sampling valve type H_A/I
1 Bellow
2 Pressure disk
3 O-Ring
4 Circlip

GEA VESTA® Sampling valve

Nominal diameter			PTFE/EPDM	
DN	**OD**	**ISO**	**6 bar**	**6 bar, ATEX**
10	½"	13.5	221-003168	221-003168
15	¾"	17.2	221-003168	221-003168
25	1"	26.9	221-002058	221-002058

Control and Feedback System




Control and feedback
Without feedback
Position indicator
Automatic
Manual
T.VIS® A-15
T.VIS® V-1
T.VIS® V-20
T.VIS® M-15
SES
LAT
INA (IHN, IHK)
Connec-tion 0

Overview

Valve automation for increased process reliability, efficiency and flexibility

GEA's 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, groundbreaking control and feedback technology. Mechanical valve components and a control top specified for the particular application together to 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. 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.

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 (GOST) 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.

For further information and details on the order code, please refer to the GEA valve automation catalog for control and feedback systems.

7 SERVICE

GEA VESTA® Sterile Valves

Our service package for dependable valve technology

With a tailored service concept, you can extend the service life of your 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 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.

General Technical Data

Area of application	
Operating pressure	Max. 10 bar
Control air pressure	Actuator NC: 6 bar Actuator NO: 5 bar Actuator AA: 4 bar
Operating temperature	0 °C up to max. 135 °C
Materials	
Product-wetted	Housing 1.4435/AISI 316L Bellow, TFM 1705 (PTFE)
Non-product-wetted	Plastic actuator: polyphenylene-sulfide (PPS) Stainless steel actuator: 1.4301 / AISI 304
Surface quality	
Product-wetted	R_a ≤ 0.8 µm (Standard), R_a ≤ 0.4 µm (optional)
Outside	Machined (housing and stainless steel actuator)
Plastic actuators	Surface structure acc. to VDI 3400, roughness 30
Nominal diameters	
DIN	DN 10 to DN 100; Outside diameter acc. to DIN 11850, series 2 / DIN 11866, series A
ISO	ISO 13.5 to ISO 114.3; Outside diameter acc. to DIN EN ISO 1127 / DIN 11866, series B
OD	OD ½" to OD 4"; Outside diameter acc. to ASME BPE / DIN 11866, series C

Certificates housing

The following certificates are available upon request:

- Housing with material certificate acc. to DIN EN 10204/3.1
- Measuring report of surface roughness acc. to DIN EN 10204
- Measuring report of delta ferrite content acc. to DIN EN 10204

Certificates PTFE bellow

- Acc. to FDA regulations 21 CFR § 177.1550 and 3-A 20–25
- Acc. to USP class VI
- Acc. to Article 3 of regulation EC 1935/2004
- Acc. to BfR LII and LFGB § 2 Section (6), Nr. 1 + 5
- Acc. to TA-Luft DIN EN ISO 15848-1
- Free of animal derived ingredients and phtalates (ADCF, TSE/BSE)

Connection ports

- Weld ends by default.
  Other fittings available upon request

Identification

- Nameplate

General Sales Terms and Condition of Delivery

Please note
All our sales and/or services are exclusively subject to our valid terms and conditions of sale and/or service applicable in the respective country of business, which can be found on our internet platform: www.gea.com.

If not available or if you otherwise wish to receive such terms and conditions directly from us, please contact us and we of course will send you the applicable version of our terms and conditions for the envisaged business.

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