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КЛАПАНЫ И КОМПОНЕНТЫ D-ТЕС

Технические характеристики



OPTIMIZED PROCESS AND PRODUCT SAFETY

D-tec® Double-chamber valves are used for the mixproof shut-off of incompatible products at pipe junctions.



The double-chamber valve represents a special version of the double-seat valve, in which the leakage chamber is designed as a sterile chamber and hermetically separated from the environment by means of two side valves. With the addition of the D-tec® D/DV to the GEA valve portfolio it is possible to equip process systems even more consistently with the renowned D-tec® stem diaphragm technology.



Reliable media separation

Due to the hermetically sealing diaphragm, D-tec® stem valves achieve a higher standard of hygiene, which, particularly in the food, beverage and dairy industry, contributes to an increased product quality and the longer minimum product shelf life demanded by the market.

Available designs

D-tec® Double-chamber valves D/DV are available with different configurations of the side valves, e.g. different fail-safe positions and an integrated temperature sensor. In addition, the valve seat seals are available as both hard- and soft-sealing – the former with a TEFASEP® gold seals.

TEFASEP® gold valve seat seals are designed to meet all requirements for hard-sealing concepts, from traditional applications with simple hot cleaning to high-end applications with demanding sterilization-in-place processes.

For seamless process integration, the valve can be operated with one, two or three T.VIS® Control tops in various versions configurations.

D-tec® Shut-off valve type N/DV

D-tec® Shut-off valves are used for the controlled opening and closing of pipelines. The valves are an ideal fit for UltraClean applications but can also be operated aseptically.



D-tec® Tank bottom valve type N/DV

D-tec® Tank bottom valves are used for the monitored control of fluids at tank applications. The valves are an ideal fit for UltraClean applications but can also be operated aseptically.



D-tec® Divert valve type W/DV

D-tec® Divert valves are used for divert functions in processing plants. The valves are an ideal fit for UltraClean applications but can also be operated aseptically.

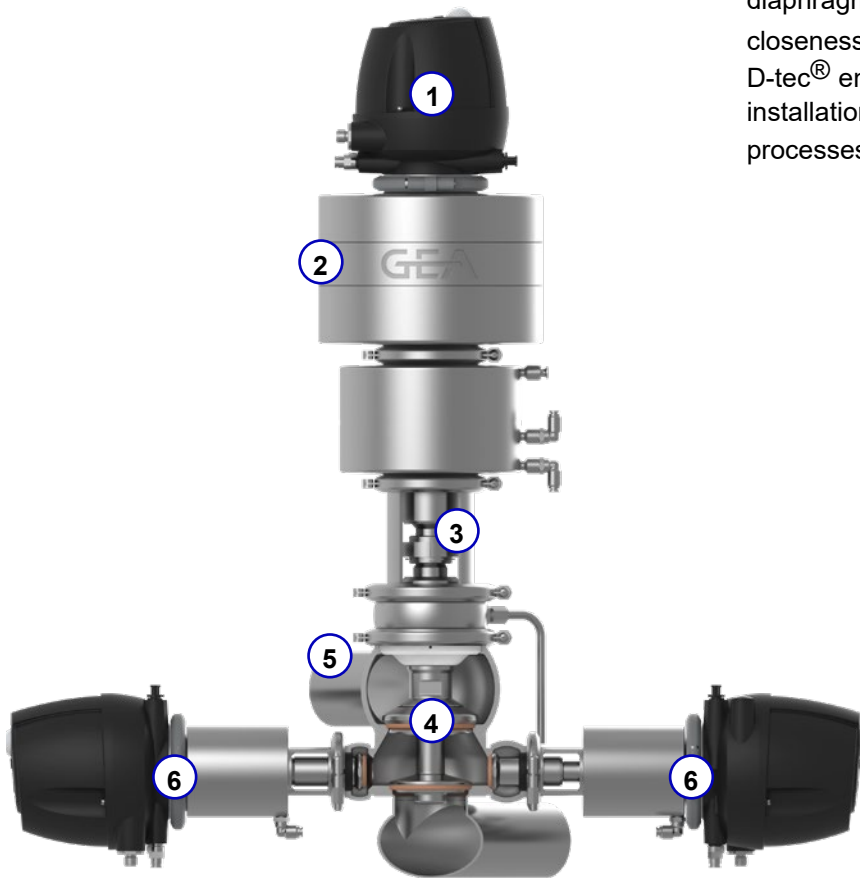


D-tec® Control valve type P/DV

D-tec® Control valves are used for the exact setting and control of parameters such as flow, pressure, temperature, or filling level in processing plants.



D-tec® Modular valve system



The D-tec® valve line offers everything required to entirely equip a process line with state-of-the-art stem diaphragm technology. Furthermore, thanks to its closeness to the known VARIVENT® hygienic valve line, D-tec® enables a simplified upgrade of existing hygienic installations to meet the requirements of ESL/UltraClean processes.



See all the D-tec® valves on our homepage

1 Feedback systems

D-tec® double chamber valves can be either equipped with open feedback units or T.VIS® control tops by default. The degree of automation at the valve can be adapted to customer needs by means of using one, two or three independent control tops.

2 Actuator

The main valve is equipped with two actuators by default. The main actuator is used to move the valve from its normally closed fail-safe position to the fully open position by applying pressurized air to the internal air supply. The lifting actuator on the other hand is used to lift the two valve seats of the main valve independently during CIP or SIP.

3 Lantern

The lantern connects the lift actuator with the product-wetted parts and simultaneously prevents the system from heat transfer between these two valve sections. The lantern has an important supporting and clamping function for the upper D-tec® stem diaphragm and is furthermore designed for a safe and easy visual detection of leakages.

4 Internal assembly

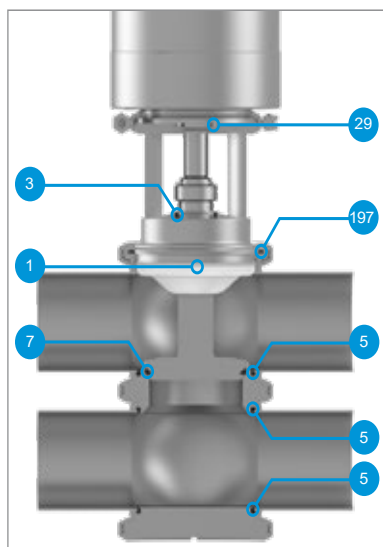
The hermetically sealing D-tec® stem diaphragm is the key element of every D-tec® valve. It is characterized by a very long service life, high dimensional stability with temperature resilience and cleanability. The internal assembly of a D-tec® double chamber valve includes two valve seat seals by default which can be equipped with soft-sealing (i.e. EPDM) or hard-sealing (TEFASEP® gold) materials. The lower valve seat corresponds with the nominal width of the valve.

5 Housing

Housings for D-tec® double chamber valves are available with three or four connection ports. The valves are produced with standard butt-weld connections suitable for orbital welding by default. Mixed connection port sizes as well as various pipe connections are available upon request.

6 Side valves

The sterile chamber includes an inlet and an outlet valve by default. The fail-safe position (NC or NO) of both side valves can be chosen independently from each other. The outlet can be equipped with integrated temperature probe which enables temperature measuring in the sterile chamber. In addition, the outlet can be configured with a divert valve to directly apply a sterile media also to the drain side of the valve.



Valves with valve disc soft sealing

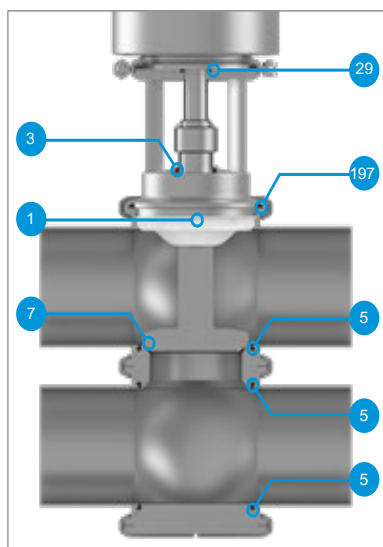
The illustration of a single-seat valve D-tec® type N/DV shown here represents an example of the configuration of a seal kit for a shut-off valve with valve disc soft sealing.

Chiefly, a seal kit consists of all of the seals for the particular valve that come in contact with the product. The precise components of all seal kits and information about maintenance can be found in the associated operating instructions.

Components of a seal kit – D-tec® type N/DV

Position	O-ring Designation	Position	Designation
1		7	V-ring
3		29	O-ring
5	O-ring	197	O-ring

Shut-off valve D-tec® type N/DV with valve disc soft sealing					
Nominal width		D-tec® diaphragm	Seal kit EPDM	Seal kit FKM	Seal kit HNBR
DN	OD	Article number	Article number	Article number	Article number
25	1"	221-004957	221-741.01	221-741.05	221-741.09
40/50	1 ½"/2"	221-004956	221-741.02	221-741.06	221-741.10
65/80	2 ½"/3"	221-004955	221-741.03	221-741.07	221-741.11
100	4"	221-004958	221-741.04	221-741.08	221-741.12



Valves with valve disc hard sealing

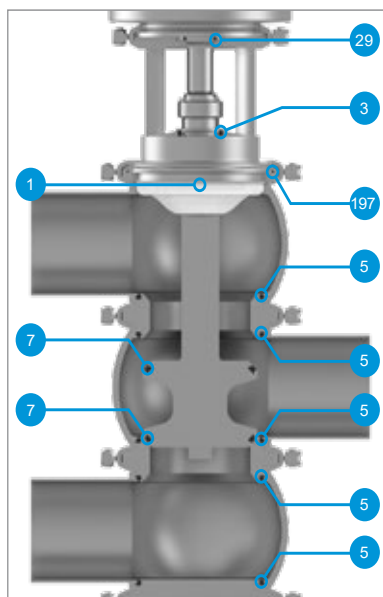
The illustration of a single-seat valve D-tec® type N/DV shown here represents an example of the configuration of a seal kit for a shut-off valve with valve disc hard sealing.

Chiefly, a seal kit consists of all of the seals for the particular valve that come in contact with the product. The precise components of all seal kits and information about maintenance can be found in the associated operating instructions.

Components of a seal kit – D-tec® type N/DV

Position	Designation	Position	Designation
1		7	O-ring
3		29	O-ring
5	O-ring	197	O-ring

Shut-off valve D-tec® type N/DV with valve disc hard sealing					
Nominal width		D-tec® diaphragm	Seal kit TEFASEP® gold/EPDM	Seal kit TEFASEP® gold/ VMQ	
DN	OD	Article number	Article number	Article number	
25	1"	221-004957	221-741.13	221-741.17	
40/50	1 ½"/2"	221-004956	221-741.14	221-741.18	
65/80	2 ½"/3"	221-004955	221-741.15	221-741.19	
100	4"	221-004958	221-741.16	221-741.20	



Valves with valve disc soft sealing

The illustration of a single-seat valve D-tec® type W/DV shown here represents an example of the configuration of a seal kit for a divert valve with valve disc soft sealing.

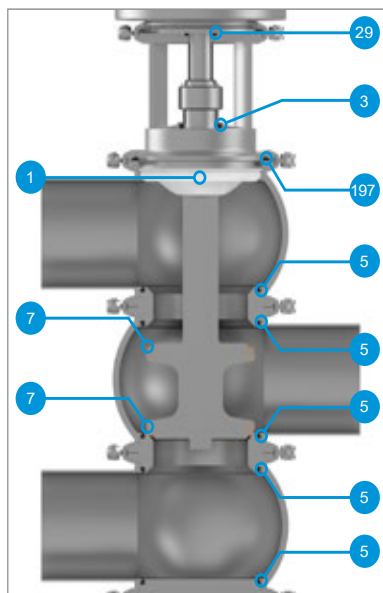
Chiefly, a seal kit consists of all of the seals for the particular valve that come in contact with the product. The precise components of all seal kits and information about maintenance can be found in the associated operating instructions.

Components of a seal kit – D-tec® type W/DV

Position	Designation	Position	Designation
1	D-tec® diaphragm	7	V-ring
3	O-ring	29	O-ring
5	O-ring	197	O-ring

Divert valve D-tec® type W/DV with valve disc soft sealing

Nominal width		D-tec® diaphragm	Seal kit EPDM	Seal kit FKM	Seal kit HNBR
DN	OD	Article number	Article number	Article number	Article number
25	1"	221-004957	221-742.01	221-742.05	221-742.09
40/50	1 1/2"/2"	221-004956	221-742.02	221-742.06	221-742.10
65/80	2 1/2"/3"	221-004955	221-742.03	221-742.07	221-742.11
100	4"	221-004958	221-742.04	221-742.08	221-742.12



Valves with valve disc hard sealing

The illustration of a single-seat valve D-tec® type W/DV shown here represents an example of the configuration of a seal kit for a divert valve with valve disc hard sealing.

Chiefly, a seal kit consists of all of the seals for the particular valve that come in contact with the product. The precise components of all seal kits and information about maintenance can be found in the associated operating instructions.

D-tec® diaphragm
O-ring

Components of a seal kit – D-tec® type W/DV

Position	Designation	Position	Designation
1	D-tec® diaphragm	7	O-ring
3	O-ring	29	O-ring
5	O-ring	197	O-ring

Divert valve D-tec® type W/DV with valve disc hard sealing

Nominal width		D-tec® diaphragm	Seal kit TEFASEP® gold/EPDM	Seal kit TEFASEP® gold/VMQ
DN	OD	Article number	Article number	Article number
25	1"	221-004957	221-742.13	221-742.17
40/50	1 1/2"/2"	221-004956	221-742.14	221-742.18
65/80	2 1/2"/3"	221-004955	221-742.15	221-742.19
100	4"	221-004958	221-742.16	221-742.20



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.

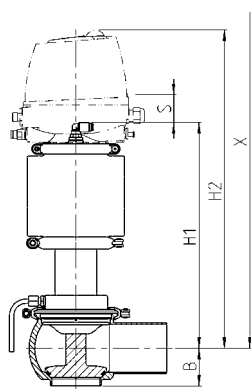
D-tec® valves are used especially in the food, beverages, biotech and dairy industries.

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	–
Mixproof valves with shut-off function and seat lifting	–
Mixproof valves with divert function	–
Tank bottom valves	N



Technical data of the standard version		
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

Nominal width	Housing	Dimensions			Valve	Article number*			
	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.

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



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.

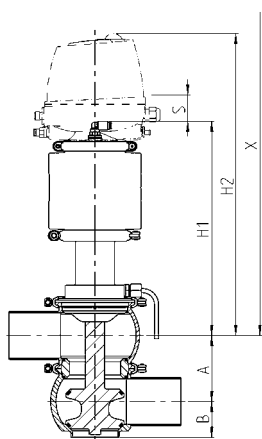
D-tec® valves are used especially in the food, beverages, biotech and dairy industries.

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	–
Single-seat valves with divert function	W
Mixproof valves with shut-off function	–
Mixproof valves with shut-off function and seat lifting	–
Mixproof valves with divert function	–
Tank bottom valves	–



Technical data of the standard version		
Recommended flow direction	product-merging	
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]	A [mm]	H1 [mm]	H2 [mm]	X [mm]	Stroke S [mm]	conversion kit	Seal set (material)		
								EPDM	FKM	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.

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