

## Aseptic double-chamber valve DK / DKBS

## Aseptic double-chamber valve DDK / AXV

### Functionality

Aseptic double-chamber valves are flow control devices for aseptic processing plants. The integrated steam barrier (ISB) enables the safe separation of both product lines via the two seat seals. According to the complexity of the plant, the valve can be designed with one (DK), two (DDK) or three (AXV) sterile steam barriers.

The integrated function of the single-seat lifting capability permits fully automatic seat cleaning during production. The number of seals and moving parts are reduced to a minimum to provide easy maintenance and low Total Cost of Ownership. The valve enables the total separation of antagonistic media and offers you maximum process safety.

### Use

- Valves are designed for use in the food, dairy and beverage, pharmaceutical, chemical, and cosmetics industries
- The modular valve design allows integration into diverse process applications
- Operating temperatures up to +150°C (+302°F), optionally increased up to +240°C (+464°F)
- CIP (Cleaning-In-Place) and SIP (Sterilizing-In-Place) capable, up to +160°C (+320°F)
- The intermediate chamber can be cleaned with condensate
- The steam and leakage valves which form the steam barrier are fully integrated into the valve body and thus enable sealing without dead spaces
- The leakage valve of the sterile chamber has a stroke of 25 mm so that particulate products may be flushed out

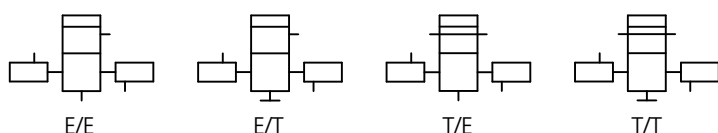
- The compact construction permits valve combinations with small dimensions
- A PT-100 temperature probe can be integrated into the double-chamber valve through the leakage valve for monitoring purposes

### Design Characteristics

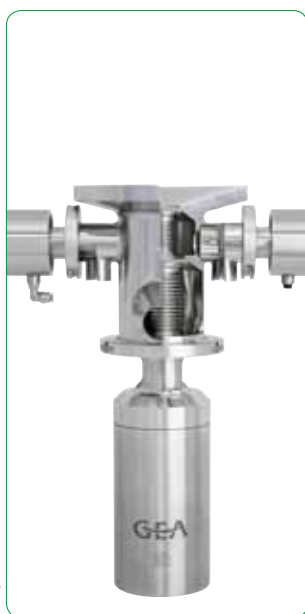
- Modular design, consisting of the three main components: housing, internal assembly, and actuator
- The actuator and internal assembly are connected to the housing with a three-piece clamp
- Low-maintenance, service-friendly, and hygienic design
- All product contact surfaces are made of AISI 316L stainless steel (materials certificate available upon request) with a surface finish of 0.8 µm Ra that meets all common hygienic standards
- Complete actuator made of stainless steel
- Customer-specific materials and surface finishes available upon request
- Valve connections can be provided with aseptic flanges, screw connections, or clamps
- Steam valve normally open by default, condensate valve normally closed. Alternate configurations are available.

### Valve Housing

The housing is available as a standard or bottom-seat variant with either two, three, or four port connections. The valves are produced with standard butt-weld connections by default. Bottom-seat valve housings are available with welded flange or screwed flange connection options.



Aseptic double-chamber valve with sterile barrier



Aseptic double-chamber bottom-seat valve

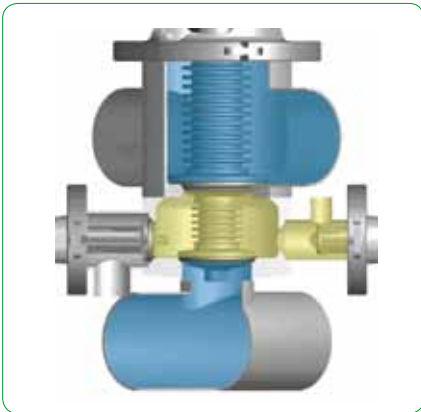


Aseptic double-chamber valve type DDK with two sterile barriers



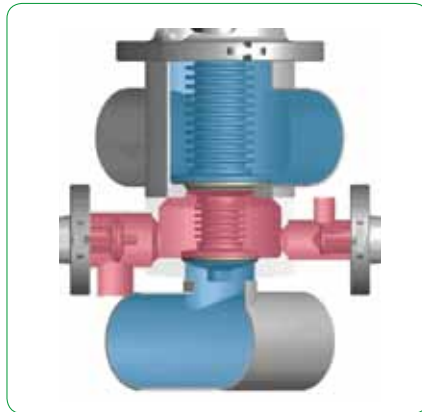
Aseptic double-chamber valve type AXV with three sterile barriers

## Functionality of the Double-Chamber Valve DK



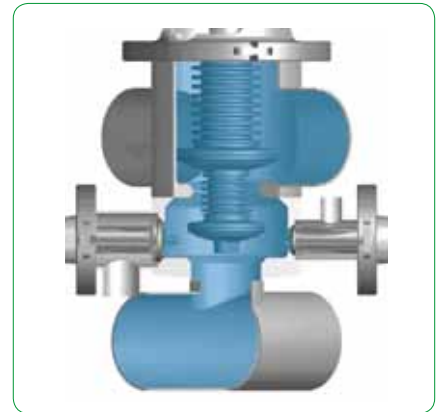
### Basic position

Safe separation of media through applied steam/condensate barrier.



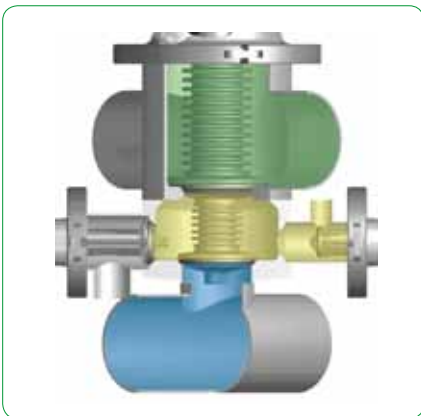
### Sterilization / flushing of the leakage chamber

The steam is conducted away through the leakage valve.



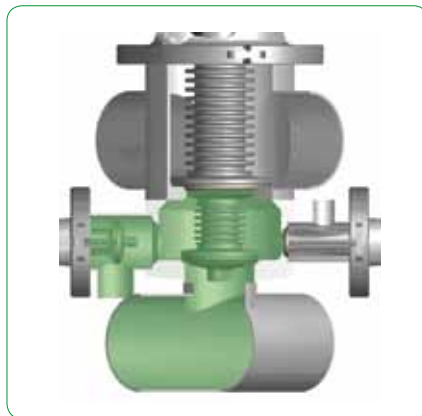
### Production

The product runs through the valve.



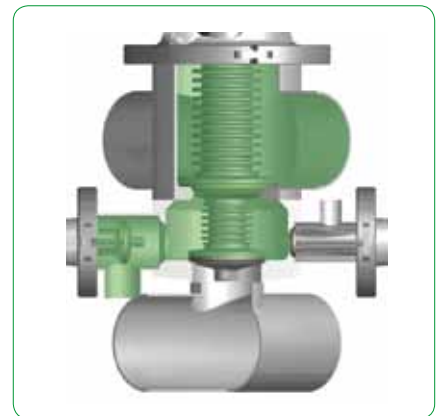
### Production below – CIP above

Production (below) is secured by an active steam barrier against cleaning (above).



### CIP / cleaning of valve seat „A”

During CIP the bottom seat is actuated to allow cleaning of the valve seat. Flushing occurs via the leakage valve. Upper seat remains sealed.



### CIP / cleaning of valve seat „B”

During CIP the upper seat is actuated to allow cleaning of the valve seat. Flushing occurs via the leakage valve. Lower seat remains sealed.

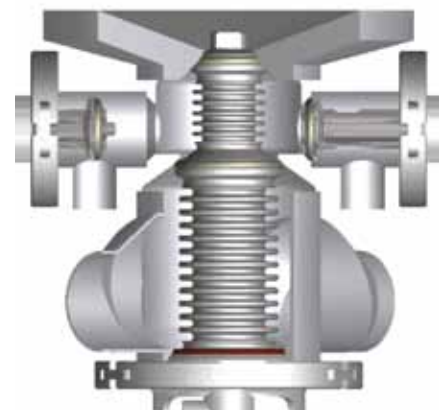
### Internal Assembly

The internal assembly is available with a shrunk-on or screwed-on valve seat seal. In addition to the standard sealant Tefasep®, other sealing materials such as PTFE, EPDM, Viton, etc., are also available. The nominal diameter of the valve is determined by the larger valve seat (upper seat seal “B” above).

### Actuator

The standard version of the pneumatic actuator is designed as spring-closing / air-opening (NC). Available actuator options include: a drive without single-seat lifting (1 valve stroke), one with the seat-lifting of the bottom valve seat (seat A) and full stroke (2 valve strokes), and finally one with single-seat lifting of both valve seats (seats A+B) and valve full stroke (3 valve strokes).

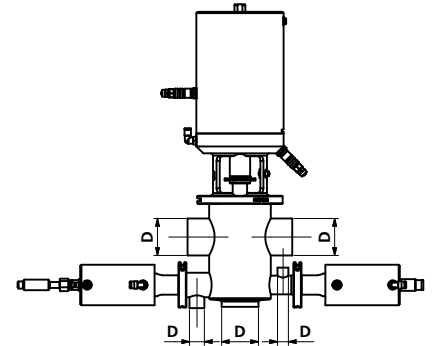
- Product
- CIP
- Steam
- Condensate



The functionality of the double-chamber bottom-seat valve DKBS is identical to that of the double-chamber valve DK.

**Dimensions of the pipe connections (acc. to DIN 11866)**

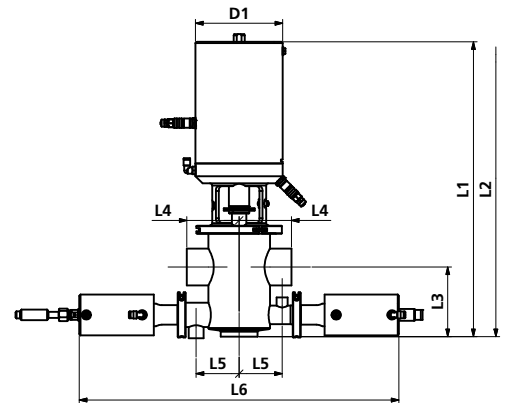
DN	25	40	50	65	80	100	125	150
DIN 11866 A (DIN 11850)								
Dim. Ø x s (mm)	29x1.5	41x1.5	53x1.5	70x2	85x2	104x2	129x2	154x2
DIN 11866 B (ISO)								
Dim. Ø x s (mm)	33.7x2	48.3x2	60.3x2	76.1x2	88.9x2.3	114.3x2.3	139.7x2.6	168.3x2.6
	1"	1½"	2"	2½"	3"	4"		6"
DIN 11866 C (OD)								
Dim. Ø x s (mm)	25.4x1.65	38.1x1.65	50.8x1.65	63.5x1.65	76.2x1.65	101.6x2.11		152.4x2.77
Dim. Ø x s (inch)	1.0x0.065	1.5x0.065	2.0x0.065	2.5x0.065	3.0x0.065	4.0x0.083		6.0x0.11



**Dimensions of the aseptic double-chamber valve DK**

DN	25	40	50	65	80	100	125	150
D1	92	112	112	150	192	192	220	267
L1	349.5	503.5	519	489.5	522.5	523.5	565	828
L2	490	670	750	640	700	700	820	1120
L3	74.5	90	96	105	121.5	131	145.5	189
L4	60	95	90	90	100	135	135	190
L5	52.5	67	67	74	90	101	101	131
L6	355	487	487	501	533	555	555	615

Other nominal diameters available upon request

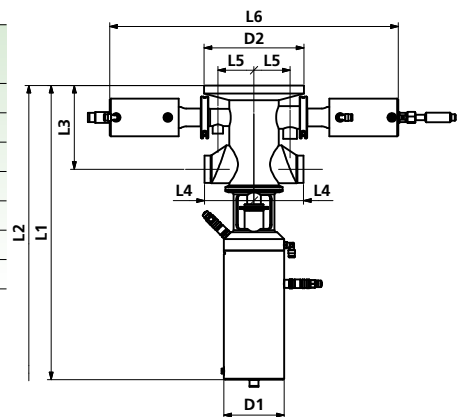


**Dimensions of the aseptic double-chamber bottom-seat valve DKBS**

DN	25	40	50	65	80	100	125*
D1	92	112	112	150	192	192	340
D2	140	185	185	185	220	250	267
L1	356.5	521	536.5	504	541	546.5	821
L2	486	660	680	640	740	800	1195
L3	103.4	135.5	145	135	160	165.3	223.5
L4	60	90	90	100	100	135	240
L5	52.5	67	67	74	90	101	145.5
L6	355	487	487	501	533	555	664

Other nominal diameters and bottom-seat versions available upon request

\* Standard execution BSO (loose flange), further information upon request



For a better overview, the spouts in all images were turned and thus do not show the standard configuration of a cross valve.