

Südmo Double Seat Valves Ideal for Valve Manifolds

Secure Separation of Incompatible Fluids





Secure Separation of Incompatible Fluids

The use of Südmo Double Seat Valves offers the hygienic and aseptic processor the ability to establish automated multiple routings with complete confidence.

Modern production processes demand parallel operation of product and cleaning cycles in order to maximise plant utilisation and thus optimise the economy of operation of sometimes complex plants. Double seat technology guarantees that all process and cleaning liquids in complex routing systems remain separated, even in the event of seal failures.

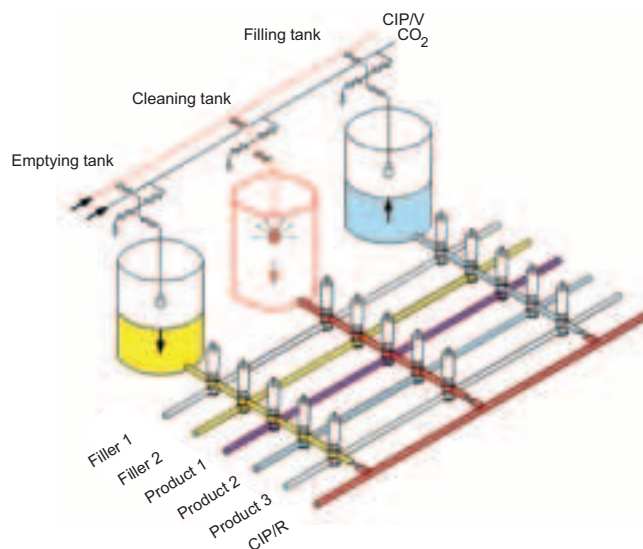
The function and value of Double Seat Valves becomes apparent when applied to the simultaneous filling, emptying and cleaning of storage vessels.

The diagram below shows how a matrix can be used to set up automatic routing from a number of vessels to multiple pipelines, by passing liquids through both upper and lower ports of individual valves in a valve matrix.

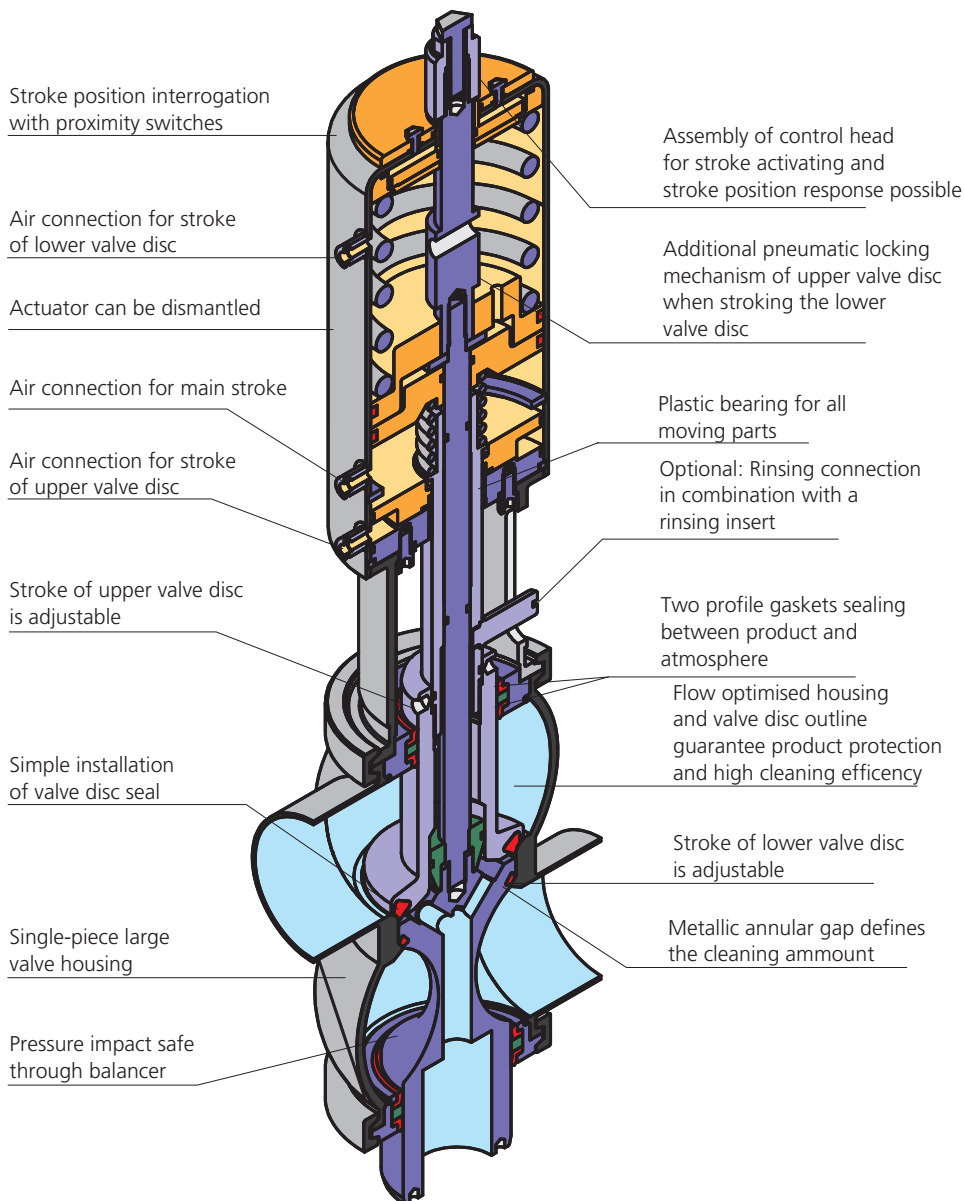
The function of the mix proof valve ensures this is achieved without danger of cross contamination by the introduction of a double seat arrangement. The space between the seats is open to atmosphere which, in the event of seal failure, establishes a preferential flow to the outside.

The distinguishing features of Südmo Double Seat Valves

- A single piece precision machined body made of non porous stainless steel
- Low number of welding seams and product contact seals in the product area
- Simple and quick replacement of product seals
- Fully serviceable integrated valve actuator assembly
- High performance seal materials with sterilising temperatures up to 150° C/300° F.
- Zero and low level switching loss versions as standard
- Pressure balanced stem designs as standard
- Modular design, which can be simply modified to accommodate, updated requirements.
- All valves conform to 3As with PMO valves available on request
- Manifolds can be supplied as pre-commissioned skid units resulting in reduced installation times
- Simple and fast maintenance with no need for special tools



Type D 600

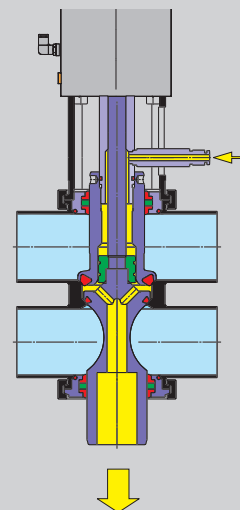


Features of D 600 Series

Type D 600

- Conical seal arrangement creates low product loss during valve opening and closing.
- Leakage space cleaned by seat pulsing during CIP line cycle.
- Rinsing connection can be retro-fitted if desired

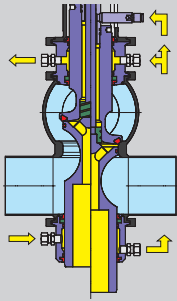
Type D 610



Features of D 610 Series

- Standard with rinsing connection
- Without stroke lifting function

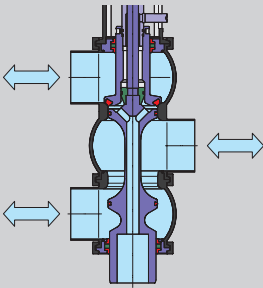
Type D 620 S-Sp



Features of D 620 S-sp Series

- Additional chambers and fittings that allow both cleaning and sterilising of otherwise exposed surfaces.
- Chambers and valve parts sterilised by the application of steam or sterilising fluids via a single connection

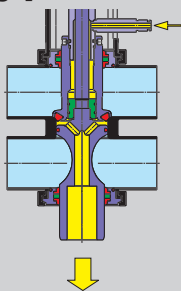
Type D 620 U



Features of D 620 U Series

- Standard two part housing with other arrangements on request
- Leakage room cleaning can be retro-fitted with a rinsing connection if desired

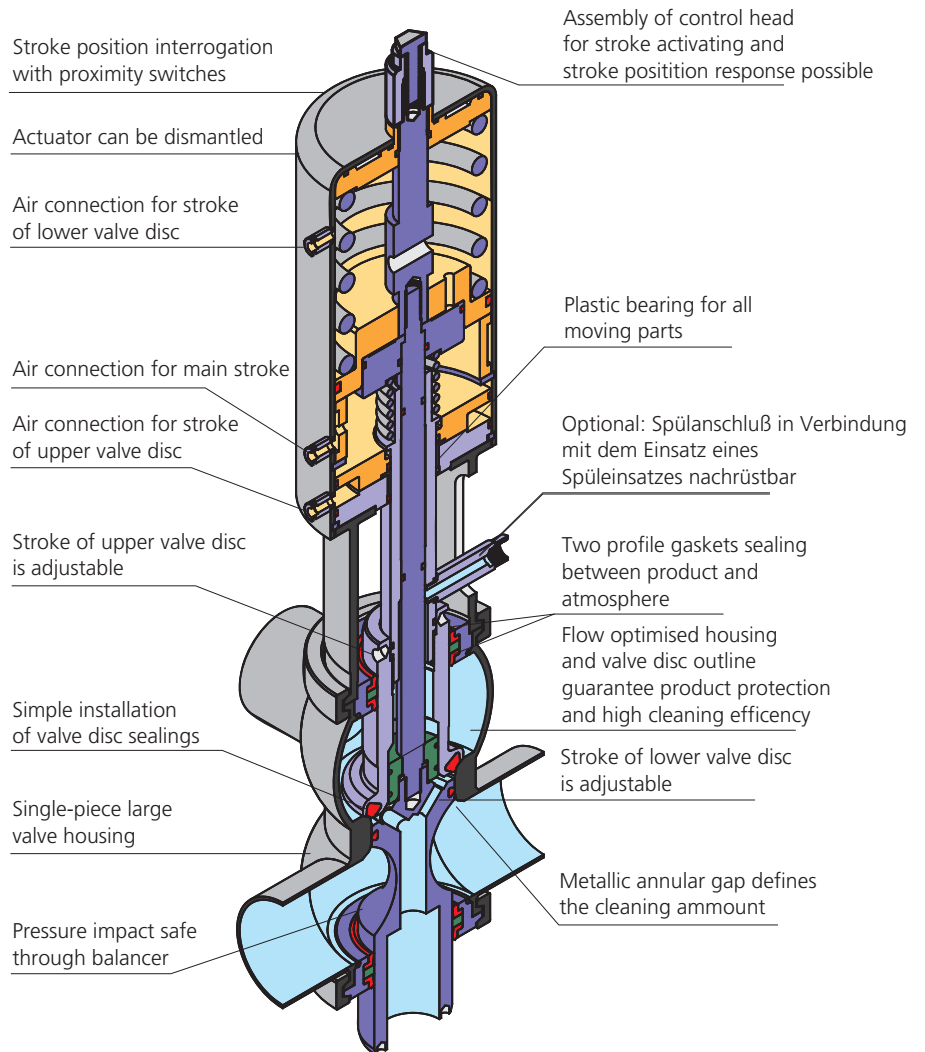
Type D 630



Features of D 630 Series

- Standard with rinsing connection
- Without stroke liftingfunction

Type D 620

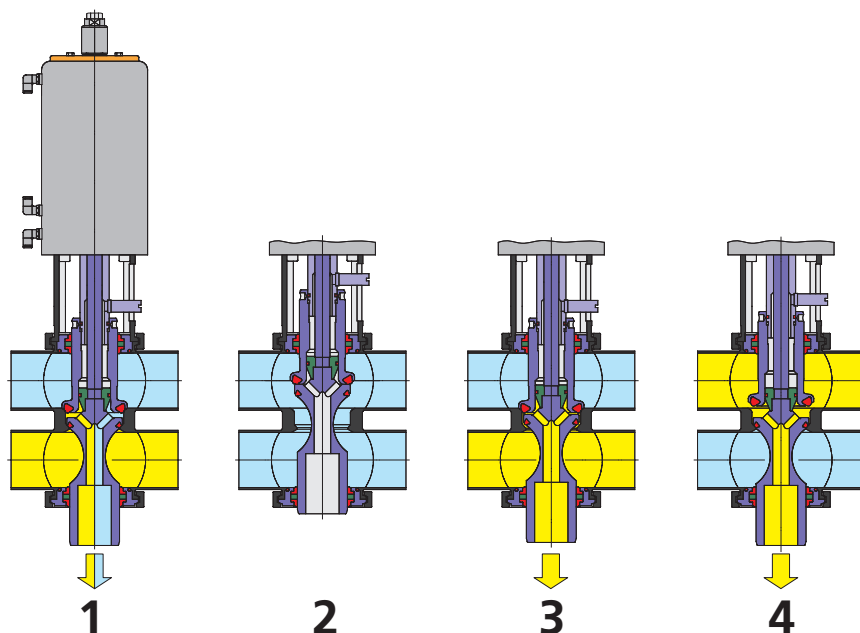


Features of D 620 Series

Type D 620

- Radial seal on lower disc eliminates product loss during valve opening and closing.
- Leakage space cleaned by seat pulsing during CIP line cycle.
- Rinsing connection can be retro-fitted if desired

Functions D 600



1 Valve in the "CLOSED" position

- Incompatible media separated by two seals with leakage space between open to atmosphere
- Any leakage due to loss of seal integrity discharged to atmosphere via leakage space

2 Valve in the "OPEN" position

- Lower disc rises, seals leakage space against upper disc and continues to fully open position.
- Slight discharge of product until leakage space secured when lower disc seals against upper.
- Upper and lower valve chambers fully connected.

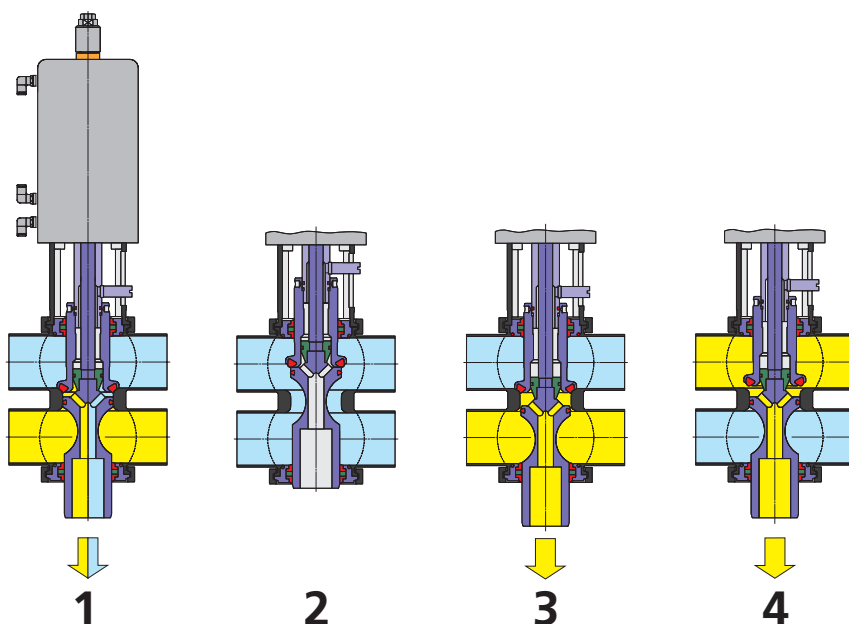
3 Cleaning of the lower seat via valve housing

- Lower disc raised pre-determined distance to allow cleaning fluid into leakage space.
- Cleaning fluid flows across seat to atmosphere and cleans seal, seat, leakage space and leakage drain.

4 Cleaning of the upper seat via valve housing

- Upper disc raised pre-adjusted distance to allow cleaning fluid into leakage space.
- Cleaning fluid flows across seat to atmosphere and cleans seal, seat, leakage space and leakage drain.

Functions D 620



1 Valve in the "CLOSED" position

- Incompatible media separated by two seals with leakage space between open to atmosphere
- Any leakage due to loss of seal integrity discharged to atmosphere via leakage space.

2 Valve in the "OPEN" position

- Lower disc rises, seals leakage space against upper disc and continues to fully open position.
- No discharge of product during opening as leakage space secured by radial seal on lower disc

3 Cleaning of the lower seat via valve housing

- Lower disc extended pre-determined distance to allow cleaning fluid into leakage space.
- Cleaning fluid flows across seat to atmosphere and cleans seal, seat, leakage space and leakage drain.

4 Cleaning of the upper seat via valve housing

- Upper disc raised pre-adjusted distance to allow cleaning fluid into leakage space.
- Cleaning fluid flows across seat to atmosphere and cleans seal, seat, leakage space and leakage drain.

Type D 640

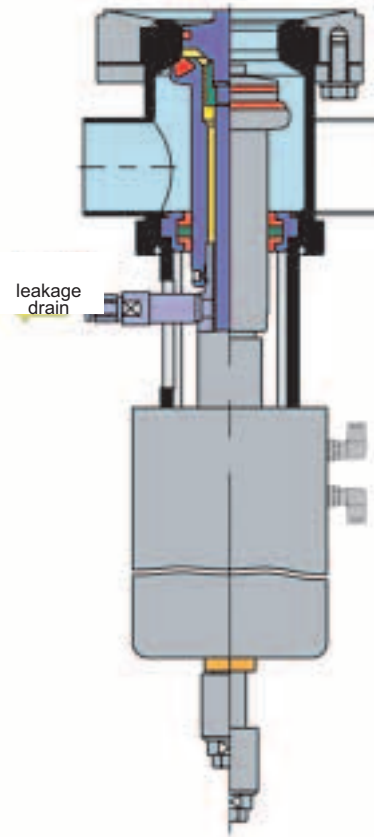
Double Seat Bottom Outlet Valve

The right alternative for operation cases where the tank-vessel drain has to be specially secured via double disc valve technique.

Malfunctions of sealings are recognised and can be eliminated without harming the product.

- Secure separation of the media through independant working valve discs with one sealing element in each of them
- Safety space between valve discs conducts leakages
- Cleaning of the leakage space via lifting of the lower valve disc in the cleaning process

D 640



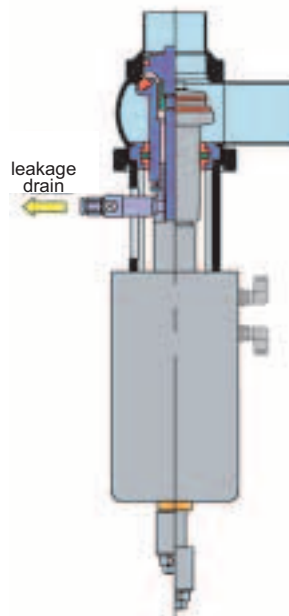
Type D 650 / 657

Double Seat Valve for Ring Mains

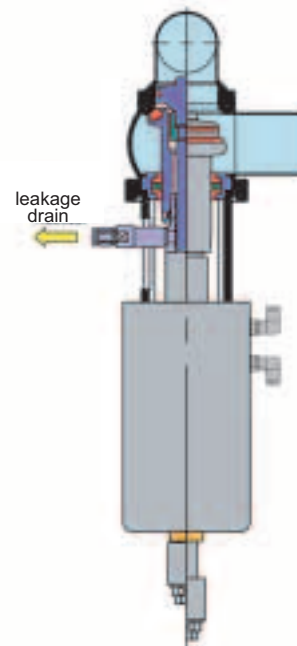
The double seat valve for closed ring mains D 657 combines the advantages of the double disc valves with the requirements of a traditional corner valve, such as secure separation of gas/CIP lines. In addition, the use of D 657 valves allows the circular pipeline to be cleaned with a pig, enabling a wide range of process options.

- Secure separation of the media through independant working valve discs with one sealing element in each of them
- Safety space between valve discs conducts leakages
- Cleaning of the leakage space via lifting of the lower valve disc in the cleaning process

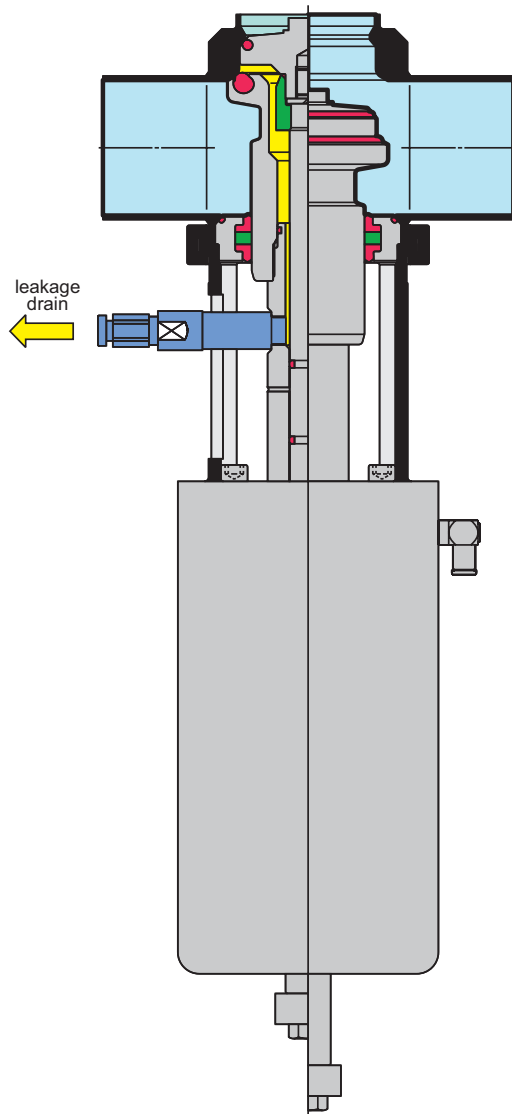
D 650



D 657



D 660



Type D 660

Double Seat Valve for CIP Areas

The Double Seat Valve D 660 realises the cleaning of the leakage space with a step seat. The step seat guarantees through its opening and closing with less stroking loss, that the leakage space is flushed in every actuation of the valve.

Malfunctions of sealings are recognised and can be eliminated without harming the product.

- Secure separation of the media through independant working valve discs with one sealing element in each of them
- Safety space between valve discs conducts leakages
- The cleaning of the leakage space happens via actuating main stroke when cleaning liquid is applied

Special Executions

The PMO version of the Double Seat Valve is in conjunction with the regulations of the american authority (3A, PMO), regarding the equipment of the leakage drain with its full size of the pipe connections.



Safe and Sterile Separation of Media - The Aseptic Process Valve

The Südmo Double Seat Valve Programme for the mixproof shut-off of incompatible media is well established in various industries. They are applied in breweries and dairies as well as in the food stuffs, beverage and pharmaceutical industries. For the requirements of asepsis Südmo developed a valve which combines the proven bellow technology of the Single Seat Valve programme with the advantages of the Double Seat Valve.

Südmo now offers an Aseptic Process Valve with a hermetic sealing against the outside atmosphere by means of a metal bellow. In the closed position two o-rings seal upper and lower main against each other. Between the two seals is a CIP/SIPable safety room. Two separat shut-off valves help to control and clean the safety space.

Also the adjustment of the upper and lower lifting stroke was taken from the standard Double Seat Valve programme. Every customer has the possibility to adjust the lifting of the upper and lower disc exactly to his needs. Additionally the functioning of the metal bellow of the Aseptic Process Valve can be controlled with the AVU to ensure a continuous high product quality.

Highest Quality of Workmanship

Specially for the use in sterile conditions great emphasis is set to an optimal surface quality of the individual process components. Certainly the Aseptic Process Valves are manufactured to the highest quality levels of workmanship.

Inside surfaces are 0,8 µm in standard. Other surface executions can be done on request.

The extremely robust single-piece valve body made of 1.4404 (AISI 316L) is absolutely advantageous for the assembly of complex matrix manifolds.

The number of necessary detachable connections between valves can be reduced to a minimum, again coming up with a reduction of costs and improved hygienic properties in the process. Of course all product wetted seals are FDA-approved.

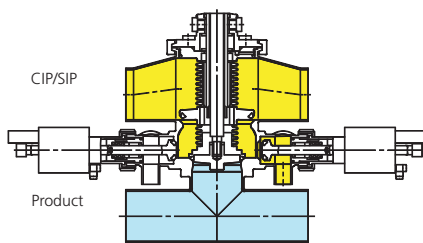
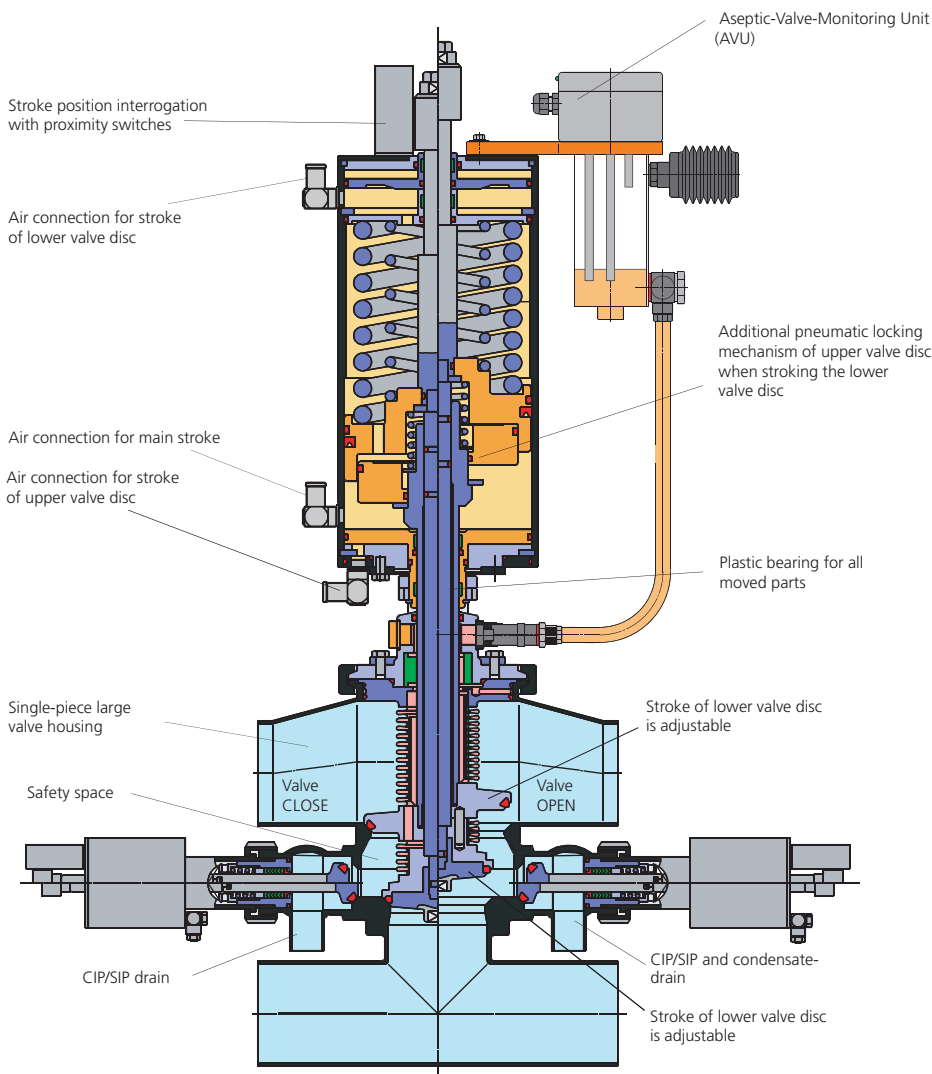
Optimum Maintenance and Handling

The maintenance of the Aseptic Process Valve is easy and can be done without any special tools. Also lifting strokes of the upper and lower valve disc can be adjusted easily.

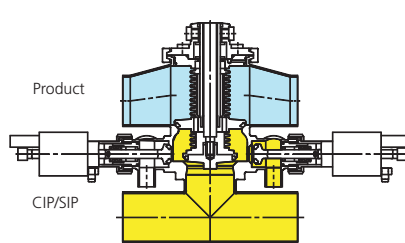
Both shut-off valves can be withdrawn from the housing and maintained.

With the help of the bellow monitoring unit maintenance intervals can be optimised and operating costs can be reduced.

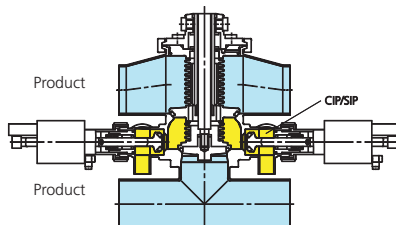
Short-term malfunctions can be detected at once and eliminated quickly.



CIP-cleaning and SIP-sterilisation of the upper valve housing incl. valve seat and safety space, upper valve disc lifted strokewise.



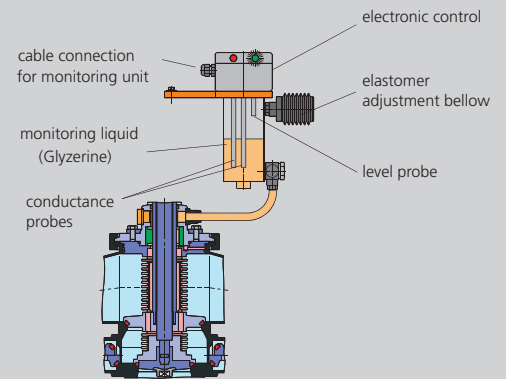
CIP-cleaning and SIP-sterilisation of the lower valve housing incl. valve seat and safety space, lower valve disc lifted strokewise.



CIP-cleaning and SIP-sterilisation of the safety space

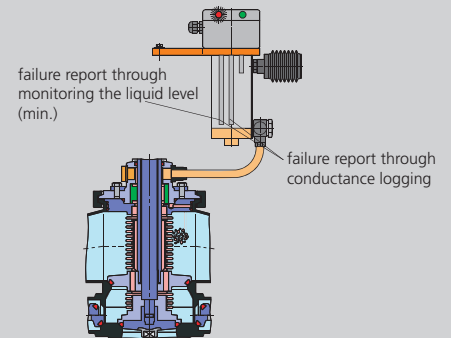
Report State I

normal operation
(green LED shows failure free operation)



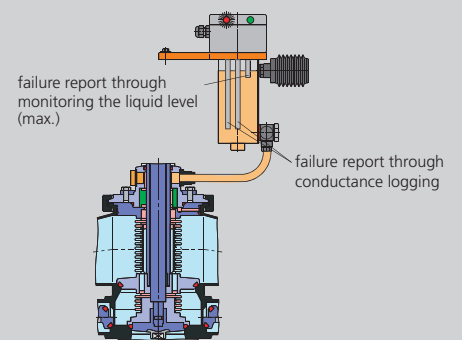
Report State II

damaged bellow, leakage of the monitoring unit



Report State III

damaged bellow, infiltration of media in the internal space of the bellow



Technical Specification (Standard) Double Seat Valves

Materials	Product wetted parts	1.4404 (AISI 316 L)
	Optional	1.4435 (AISI 316 L)
	Parts not product wetted	1.4301 (AISI 304)
Sealing Elements	Sealing materials (FDA-approved)	EPDM
		Other sealing materials on request
Temperatures	Continuous operating temperature	EPDM 130° C / 265° F*
	Sterilization temperature	EPDM 150° C / 300° F* (approx. 20 min.)
Pressures	Operating pressure	Standard 6 bar, optional 10 bar
	Control pressure	Min. 6 bar - max. 10 bar
Surfaces	Product wetted surfaces	Ra ≤ 0,8 µm
	Others	Bright-turned, Ra ≤ 1,6 µm
	Optional	Surfaces product wetted e-polished, higher quality surfaces on request
Connections	Standard	Welding ends for pipes acc. to DIN 11850 series 2, OD-Tube
	Optional	All common threaded and flange connections

Technical Specification (Standard) Aseptic Process Valves

Materials	Product wetted parts	1.4404 (AISI 316 L)			
	Optional	1.4435 (AISI 316 L)			
	Parts not product wetted	1.4301 (AISI 304)			
Sealing Elements	Sealing materials (FDA-approved)	EPDM			
		Other sealing materials on request			
Temperatures	Continuous operating temperature	EPDM 130° C / 265° F*			
	Sterilization temperature	EPDM 150° C / 300° F* (approx. 20 min.)			
Pressures	Operating pressure/upper main	DN 50/2"	max. 5 bar	DN 80/3"	max. 5 bar
		DN 65/2"	max. 5 bar	DN 100/4"	max. 5 bar
	Operating pressure/lower main	DN 50/2"	max. 6 bar	DN 80/3"	max. 5 bar
		DN 65/2"	max. 6 bar	DN 100/4"	max. 6 bar
	Operating pressure/sterile chamber	DN 50/2"	max. 3 bar	DN 80/3"	max. 3 bar
		DN 65/2"	max. 3 bar	DN 100/4"	max. 4 bar
Control pressure	Min. 6 bar - max. 8 bar				
Surfaces	Product wetted surfaces	Ra ≤ 0,8 µm			
	Others	Bright-turned, Ra ≤ 1,6 µm			
	Optional	Surfaces product wetted e-polished, higher quality surfaces on request			
Connections	Standard	Welding ends for pipes acc. to DIN 11850 series 2, OD-Tube			
	Optional	All common threaded and flange connections			

* Depending on operating parameters

IntelliTop[®] Controlling and Monitoring

The integration of valve technology in fully or partly automatic production processes is done with integrated controlling and reporting. Therefore you get the possibility to control function and condition of your plant consequently. The electronic actuation is combined in the multi-functional Südmo control top, which can be easily installed on pneumatic drives via a flange adaptor.

General Advantages

- Pressure relief valve within the control top
- Potted electronics
- Suitable for strokes up to 80 mm
- Spindle protected by protective tube
- Robust stainless steel cap
- Protection class IP 67
- Optimum cost-performance ratio due to modular concept
- Control top adjustable in 30°-steps
- Simple and fast installation
- Vibration protected plug connections





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Südmo Components GmbH reserves the right to make changes in the technical specifications at any time.