



# SÜDMO

## ASEPTIC PROCESS VALVE SECURE



ELEVATED  
EFFICIENCY.  
**FOR LIFE.**

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# THE ASEPTIC PROCESS VALVE SERIES SECURE

Based on its many years of experience in valve construction, Südmö offers a comprehensive, refined, and mix proof aseptic process valve for use and automation in a wide range of production processes for the food, dairy, pharmaceutical, and beverage industries.



## OPERATING RANGE AND FIELD OF APPLICATION



**ASEPTIC  
APPLICATIONS**



**HIGHLY CONCENTRATED &  
CRYSTALIZEABLE MEDIA**



**CHALLENGING  
PRODUCTS**

### WIDE RANGE OF APPLICATIONS

- Pasteurized area of dairies
- Cold aseptic filling (CAF)
- Pharmaceutical and biochemical facilities
- Lactose/milk sugar
- Instant coffee
- Abrasive media
- Low-acid products, fruit and vegetable purees and concentrates
- Fruit and confectionery bases, sauces, yogurt or quark with diced fruit (peach, apricot, strawberry, pear, apple, pineapple)
- Diced fruit
- Diced tomatoes / tomato paste

## MARKET REQUIREMENTS - GROWING NEED FOR ASEPTIC VALVES AND PRODUCTION



### INCREASE MARKET ACCEPTANCE AND QUALITY

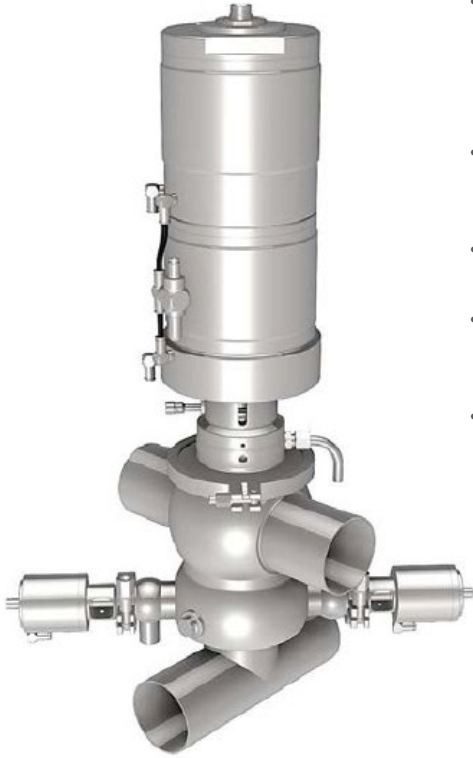
- Increase product life and maximize product shelf-life
- Sterile products
- Microbiological durability
- Increase and stabilize product quality
- Avoid use of chemical preservatives
- Unflavored products
- Enable cold aseptic filling
- No subsequent sterilization of the package required
- Protect against production rejects and product recalls

## BENEFITS

- High operating pressures up to 10 bar (145 psi)
- High operating temperatures up to 150 °C (302 °F)
- Easy to clean and sterilize
- Self drainable, sump and dome free
- Easy maintenance - simple seal replacement
- Leak detection
- Position feedback of all valve strokes



## PRODUCT OVERVIEW



Aseptic Process Valve Secure  
Mix Proof Valve

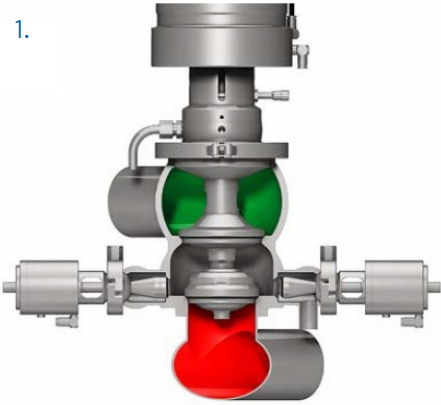
- **Variations**  
Double seat with T-piece (standard)  
Double seat tank outlet valve  
(both available with different port configurations)
- **Sizes**  
Metric dimensions DN 50, DN 65, DN 80  
Inch dimensions DN 2.0", 2.5", DN 3.0"
- **Seal Materials**  
EPDM, HNBR and FKM
- **Product wetted materials**  
1.4404 (standard)  
1.4435 (optional)
- **Product wetted surfaces**  
Ra ≤ 0.8 μm (standard)  
Higher quality surfaces on request



Aseptic Process Valve Secure  
Mix Proof Tank Outlet Valve

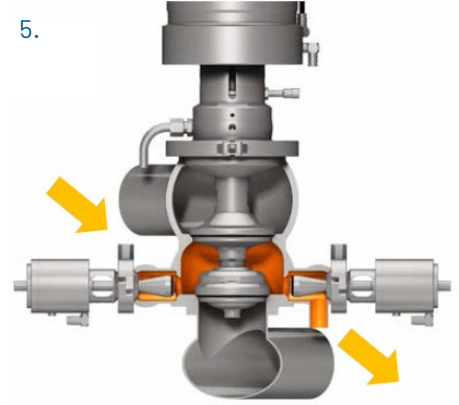
## VALVE FUNCTIONS

1.

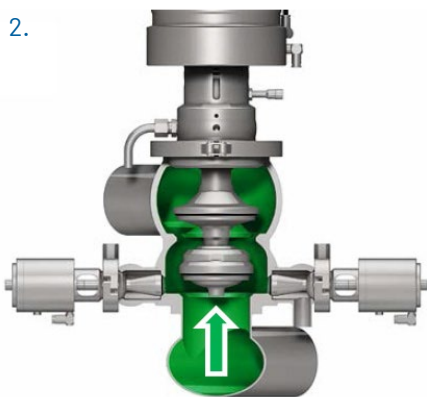


1. Valve closed
2. Valve opened
3. Seat cleaning/  
Cyclic lift of upper valve disc
4. Seat cleaning  
Cyclic lift of lower valve disc
5. Sterilization / flushing

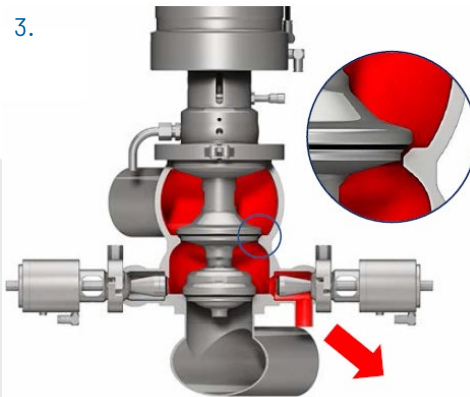
5.



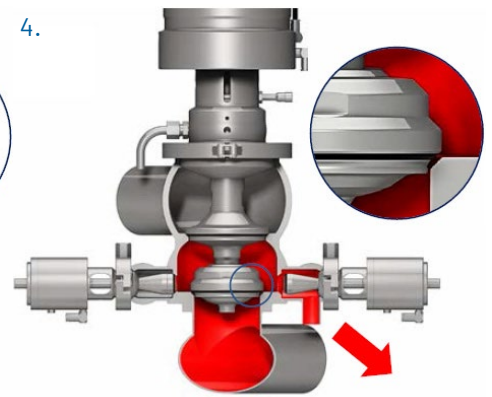
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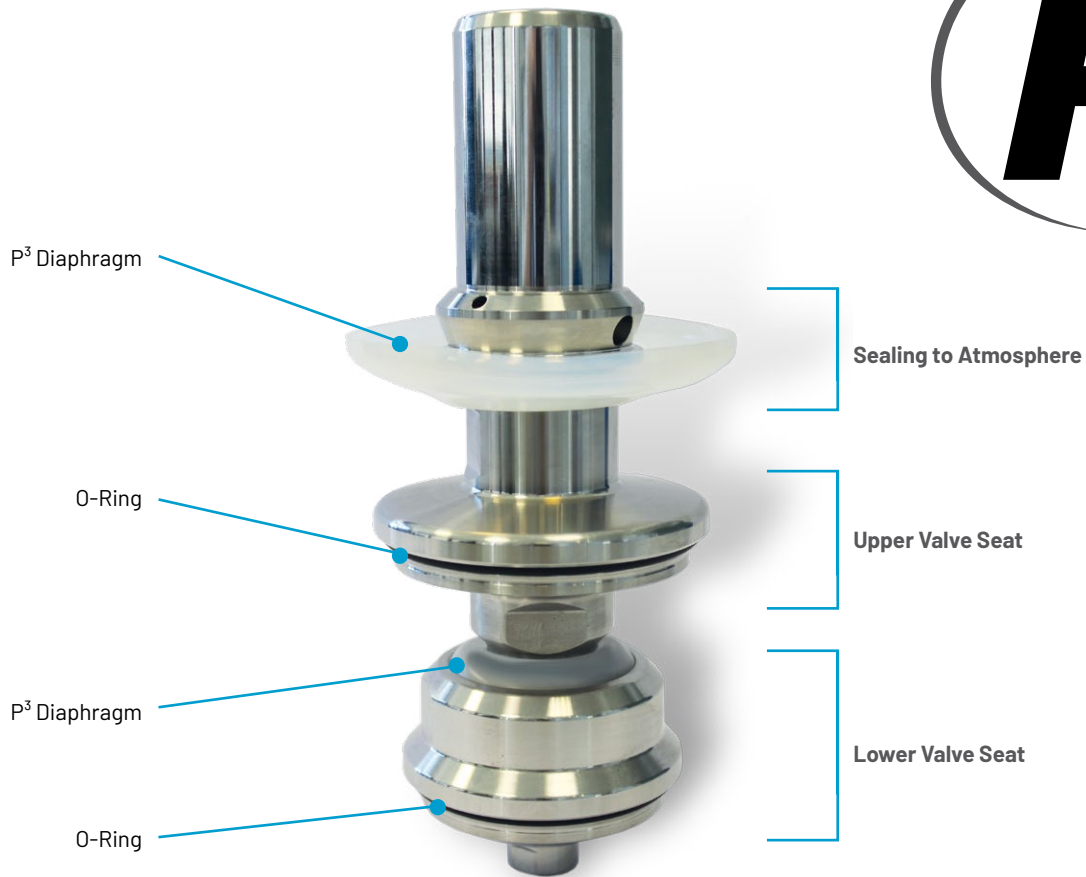


3.



4.





## TECHNICAL ADVANTAGES OF THE P<sup>3</sup> DIAPHRAGM

### DESIGN

- Very good flow CV's
- Easy cleaning
- Suitable for the use with large particulates (fruits, nuts)
- Dome free housing design
- Leak detection
- Avoiding hygienic risks

### RESISTANCE

- Extremely good chemical resistance
- Temperature stable material
- High temperature resistance

**EXTREMELY GOOD CHEMICAL RESISTANCE**  
**TEMPERATURE RESISTANCE UP TO 150 °C (302 °F)**  
**DYNAMIC WORKING PRESSURE UP TO 10 BAR (145 PSI)**  
**HIGH NUMBER OF CYCLES > 300,000**

### MATERIAL

- Homogeneous material
- No elastomer
- Plastic like PTFE (polytetrafluoroethylene)
- No cold flow
- Elasticity, elastic recovery
- Low adhesive coefficient

### DURABILITY

- Good mechanical material properties
- Good dynamic and static pressure stability
- High number of switching cycles and load cycles

## TECHNICAL BENEFITS OF THE P<sup>3</sup> DIAPHRAGM

AREA	P <sup>3</sup> DIAPHRAGM ADVANTAGES
Flow Characteristics	Compared to bellows flow from the side is possible.
Cleaning Abilities	Excellent cleaning due to the membrane and body design.
Pressure Shock Resistance	Less sensitive to dynamic pressure shocks as the diaphragm is supported from behind. The unsupported space behind the diaphragm is minimized.
Service Life	High number of cycles provides a long service life.
Maintenance	Due to the design, Südmo valves are quick and easy to repair and maintain.
Security	Safe and secure leakage detection.

## COMMERCIAL BENEFITS OF THE P<sup>3</sup> DIAPHRAGM

AREA	P <sup>3</sup> DIAPHRAGM ADVANTAGES
Operation and Environment	Improved equipment efficiencies, better protection of downstream equipment, and minimized batch contamination due to the more reliable diaphragm. Shorter and easier cleaning cycles reduce the overall demand for media (water, caustic / acid concentrates).
Maintenance Costs	A longer diaphragm service life increases process run time and reduces labor and documentation costs for membrane replacement.
Spare Parts	Only the P <sup>3</sup> diaphragm is replaced, which reduces spare parts and inventory carrying costs.
Cost Savings	Based on the service life over several years you will see significant cost savings, improved product conditions, and longer process run times.

## GENERAL TECHNICAL DATA

### MATERIAL

#### Product contact

1.4404 (AISI 316L) Standard  
1.4435 (AISI 316L) Optional

#### Non-product contact

1.4301 (AISI 304) / 1.4307 (AISI 304 L)

#### Optional

Higher quality materials

#### Seals\*

EPDM / HNBR / FKM

\*All seal qualities are FDA compliant

### PRESSURES

#### Control air pressure

Standard 6 bar (87 psi) – 8 bar (116 psi)

#### Operating pressure

Standard 10 bar (145 psi)\*

\*Depending on type and nominal width

### SURFACES

#### Product wetted

Ra ≤ 0.8 µm

#### Others

Ra ≤ 1.6 µm

#### Optional

Higher-quality surfaces, e-polished

### CONNECTIONS

#### Pipe dimensions in accordance with

- DIN 11850-2 (DIN 11866-A)  
- ASTM A270 (DIN 11866-C) (ASME BPE-2009)

# OPERATING TEMPERATURES

## EPDM

Standard



### Hot water

+95 °C (203 °F) continuous

### Steam

+130 °C (266 °F) continuous  
+150 °C (302 °F) brief sterilization  
(15-20 minutes)

### Cold water

+1 to +2 °C (33.8 - 35.6 °F) continuous

## HNBR

optional



### Hot water

+95 °C (203 °F) continuous

### Steam

+130 °C (266 °F) continuous  
+140 °C (284 °F) brief sterilization  
(15-20 minutes)

### Cold water

+1 to +2 °C (33.8 - 35.6 °F) continuous

## FKM

optional



### Hot water

+80 °C (176 °F) continuous

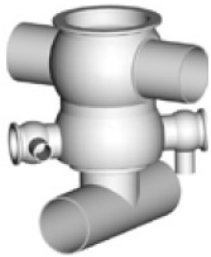
### Steam

+125 °C (257 °F) brief sterilization  
(15-20 minutes)

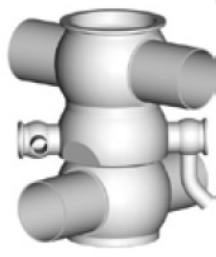
### Cold water

+1 to +2 °C (33.8 - 35.6 °F) continuous

# HOUSING VARIANTS

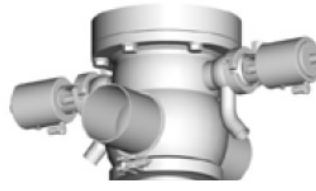


Standard housing with T-piece



Fully machined housing

External dimensions are identical to the previous valve model



Housing for mix proof tank outlet valve

# NOMINAL SIZES

## According to DIN 11850-2 (DIN 11866-A)

- DN 050
- DN 065
- DN 080

## According to ASTM A270 (DIN 11866-C) (ASME BPE-2009)

- 2.0"
- 2.5"
- 3.0"

# SPECIFIC TECHNICAL DATA

## EXECUTION ASEPTIC FLUSHING VALVE

### Standard

- P<sup>3</sup> diaphragm with metallic valve disc and o-ring

## POSITION FEEDBACK

### IntelliTop® 2.0



### External proximity switch



## OPTIONAL ACCESSORY

### Temperature sensor

- Labom standard
- Other on request



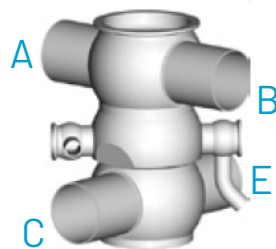
## CERTIFICATIONS

- EHEDG certification (cleanability / sterility)
- 3-A® Sanitary Standard

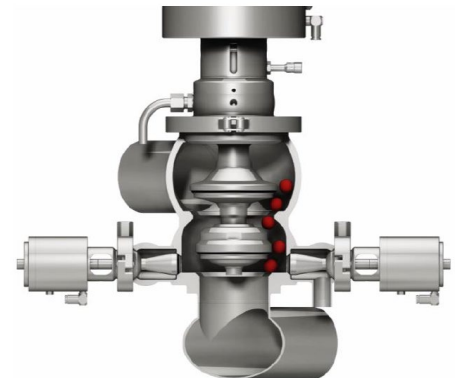
# SPECIFIC TECHNICAL DATA

OPERATING PARAMETERS		DN 050	DN 065	DN 080
Operating pressure		10 bar / 145 psi	10 bar / 145 psi	8 bar / 116 psi
Control pressure		6 barÜ - 8 barÜ 87 psi - 116 psi	6 barÜ - 8 barÜ 87 psi - 116 psi	6 barÜ - 8 barÜ 87 psi - 116 psi
Steam: Continuous operating temperature	EPDM (FDA)	130 °C / 266 °F	130 °C / 266 °F	130 °C / 266 °F
Steam: Sterilization temperature (< 30 min/d)	EPDM (FDA)	150 °C / 302 °F	150 °C / 302 °F	150 °C / 302 °F
Steam: Continuous operating temperature	HNBR (FDA)	121 °C / 250 °F	121 °C / 250 °F	121 °C / 250 °F
Steam: Sterilization temperature (< 30 min/d)	HNBR (FDA)	140 °C / 284 °F	140 °C / 284 °F	140 °C / 284 °F
Steam: Continuous operating temperature	FKM (FDA)	Not suitable	Not suitable	Not suitable
Steam: Sterilization temperature (< 30 min/d)	FKM (FDA)	121 °C / 250 °F	121 °C / 250 °F	121 °C / 250 °F
Hot water	EPDM	130 °C / 266 °F	130 °C / 266 °F	130 °C / 266 °F
	HNBR	130 °C / 266 °F	130 °C / 266 °F	130 °C / 266 °F
	FKM	80 °C / 176 °F	80 °C / 176 °F	80 °C / 176 °F
Aqueous caustic solution (Sodium hydroxide solution)	EPDM	80 °C / 176 °F (≤5.0%)	80 °C / 176 °F (≤5.0%)	80 °C / 176 °F (≤5.0%)
	HNBR	80 °C / 176 °F (≤3.0%)	80 °C / 176 °F (≤3.0%)	80 °C / 176 °F (≤3.0%)
	FKM	80 °C / 176 °F (≤5.0%)	80 °C / 176 °F (≤5.0%)	80 °C / 176 °F (≤5.0%)
Aqueous acid (Nitric acid)	EPDM	40 °C / 104 °F (≤3.0%)	40 °C / 104 °F (≤3.0%)	40 °C / 104 °F (≤3.0%)
	HNBR	40 °C / 104 °F (≤1.5%)	40 °C / 104 °F (≤1.5%)	40 °C / 104 °F (≤1.5%)
	FKM	60 °C / 140 °F (≤1.5%)	60 °C / 140 °F (≤1.5%)	60 °C / 140 °F (≤1.5%)
Aqueous sanitizer (Peracetic acid)	EPDM	30 °C / 86 °F (≤0.7%)	30 °C / 86 °F (≤0.7%)	30 °C / 86 °F (≤0.7%)
	HNBR	Not suitable	Not suitable	Not suitable
	FKM	30 °C / 86 °F (≤0.2%)	30 °C / 86 °F (≤0.2%)	30 °C / 86 °F (≤0.2%)
CV-value A-B *		85.8 m³/h	152 m³/h	225 m³/h
CV-value C-E *		182 m³/h	317 m³/h	498 m³/h
CV-value A-C *		58.9 m³/h	82.0 m³/h	115 m³/h
CV-value C-A *		46.7 m³/h	72.8 m³/h	103 m³/h
Particulate size for bulky media **		≤ 10 mm	≤ 12,5 mm	≤ 16 mm

\* See above for CV-values



\*\* See above for particulate size



PENTAIR SÜDMO GMBH

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