PENTAIR

SÜDMO
ASEPTIC PROCESS VALVE
SECURE

THE ALL NEW ASEPTIC PROCESS VALVE SERIES **SECURE**

Based on its many years of experience in valve construction, Südmo 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

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, cottage cheese; with / or diced fruit (peach, apricot, strawberry, pear, apple, tropical 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

KEY BENEFITS OF THE ASEPTIC MIX PROOF VALVE SERIES SECURE

- **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

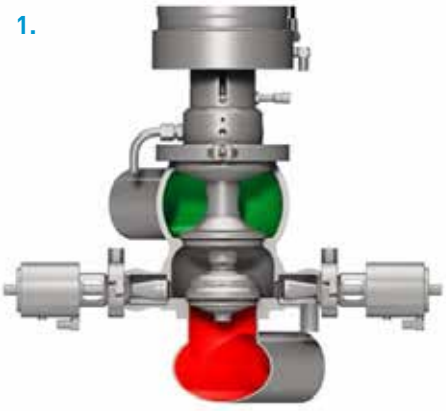
- **Variations**
  Double seat with T-piece (standard)
  Double seat tank outlet valve
  (both available with different port configurations)
- **Sizes**
  Metric dimensions DN 50, DN 65, DN 80
  Inch dimensions DN 2.0", 2.5", DN 3.0"
- **Seal Materials**
  EPDM, HNBR and FKM
- **Product wetted materials**
  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. 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

1.



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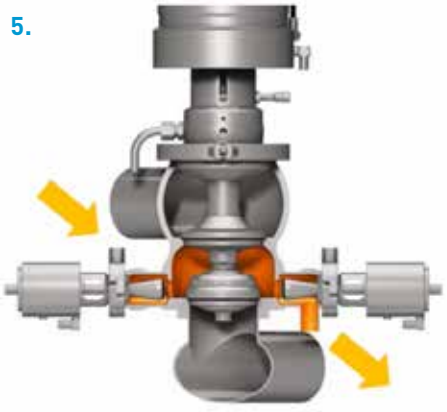

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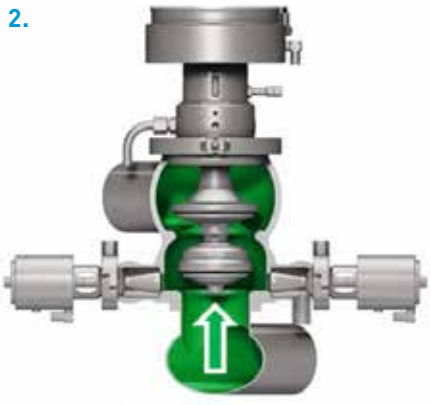

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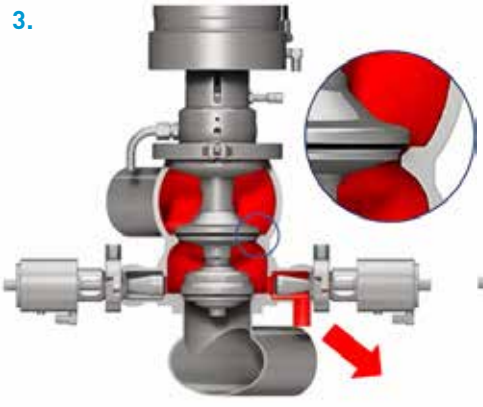

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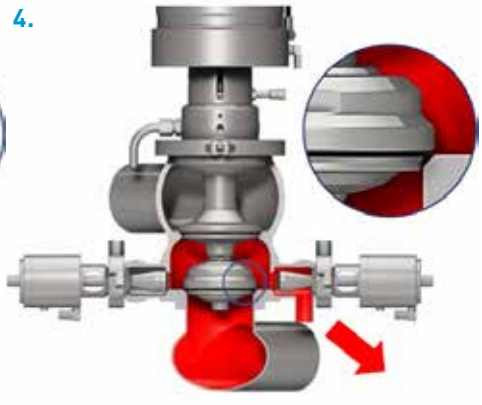
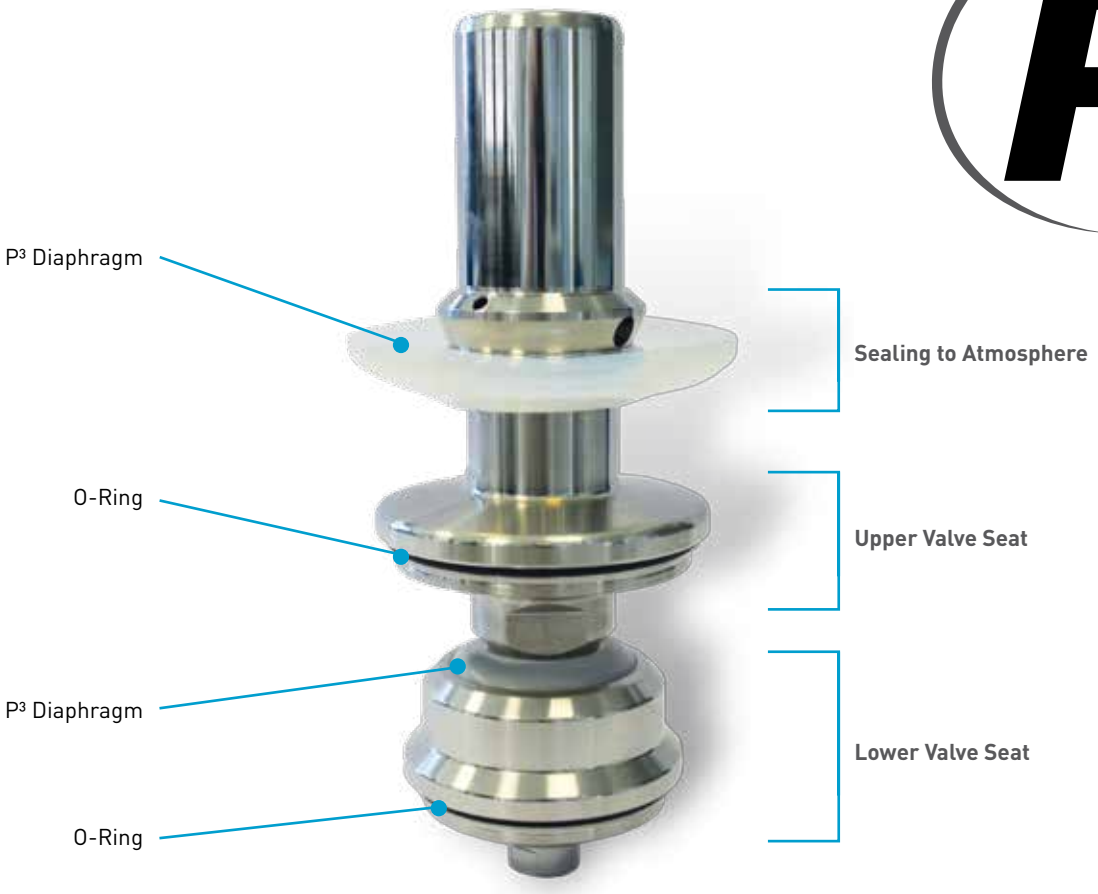


P³ DIAPHRAGM TECHNOLOGY



TECHNICAL ADVANTAGES OF THE P³ DIAPHRAGM

DESIGN

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

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 P³ DIAPHRAGM

AREA	P³ 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 P³ DIAPHRAGM

AREA	P³ 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 P³ 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

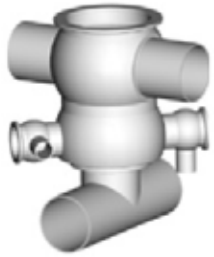
FKM
optional

Hot water
+80 °C (176 °F) continuous

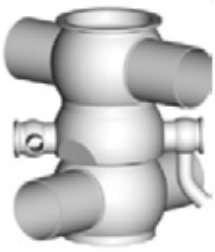
Steam
+125 °C (257 °F) brief sterilization
(15-20 minutes)

Cold water
+1 to +2 °C (33.8 – 35.6°F) continuous

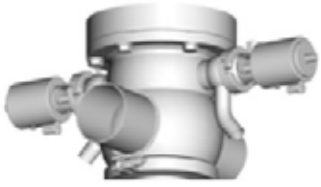
HOUSING VARIANTS



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
- P³ 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

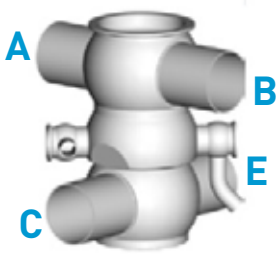
CERTIFICATIONS

- 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 **		≤10mm	≤12,5mm	≤16mm

* See above for CV-values



** See above for particulate size

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PENTAIR SÜDMO GMBH
INDUSTRIESTRASSE 7, 73469 RIESBÜRG, GERMANY WWW.SUEDMO.DE