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.

**THE ALL NEW ASEPTIC PROCESS VALVE SERIES**

**SECURE**

**OPERATING RANGE AND FIELD OF APPLICATION**

- Pasteurized area of dairies
- Cold aseptic filling (CAF)
- Pharmaceutical and biochemical facilities

**ASEPTIC APPLICATIONS**

- 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

**HIGHLY CONCENTRATED & CRYSTALIZEABLE MEDIA**

- Lactose/milk sugar
- Instant coffee
- Abrasive media

**CHALLENGING PRODUCTS**

**WIDE RANGE OF APPLICATIONS**
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**

- **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

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**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
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

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

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
## Technical Benefits of the P³ Diaphragm

<table>
<thead>
<tr>
<th>Area</th>
<th>P³ Diaphragm Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Characteristics</td>
<td>Compared to bellows flow from the side is possible.</td>
</tr>
<tr>
<td>Cleaning Abilities</td>
<td>Excellent cleaning due to the membrane and body design.</td>
</tr>
<tr>
<td>Pressure Shock Resistance</td>
<td>Less sensitive to dynamic pressure shocks as the diaphragm is supported from behind. The unsupported space behind the diaphragm is minimized.</td>
</tr>
<tr>
<td>Service Life</td>
<td>High number of cycles provides a long service life.</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Due to the design, Südmo valves are quick and easy to repair and maintain.</td>
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<tr>
<td>Security</td>
<td>Safe and secure leakage detection.</td>
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</tbody>
</table>

## Commercial Benefits of the P³ Diaphragm

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<th>Area</th>
<th>P³ Diaphragm Advantages</th>
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<tbody>
<tr>
<td>Operation and Environment</td>
<td>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].</td>
</tr>
<tr>
<td>Maintenance Costs</td>
<td>A longer diaphragm service life increases process run time and reduces labor and documentation costs for membrane replacement.</td>
</tr>
<tr>
<td>Spare Parts</td>
<td>Only the P³ diaphragm is replaced, which reduces spare parts and inventory carrying costs.</td>
</tr>
<tr>
<td>Cost Savings</td>
<td>Based on the service life over several years you will see significant cost savings, improved product conditions, and longer process run times.</td>
</tr>
</tbody>
</table>
ASEPTIC PROCESS VALVES SECURE

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]

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

SPECIFIC TECHNICAL DATA

EXECUTION ASEPTIC FLUSHING VALVE
Standard
- P³ diaphragm
  with metallic valve disc and o-ring

POSITION FEEDBACK
IntelliTop® 2.0

OPTIONAL ACCESSORY
Temperature sensor
- Labom standard
- Other on request

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

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.
## OPERATING PARAMETERS

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<thead>
<tr>
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<th>DN 050</th>
<th>DN 065</th>
<th>DN 080</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating pressure</strong></td>
<td>10 bar / 145 psi</td>
<td>10 bar / 145 psi</td>
<td>8 bar / 116 psi</td>
</tr>
<tr>
<td><strong>Control pressure</strong></td>
<td>6 barÜ - 8 barÜ, 87 psi - 116 psi</td>
<td>6 barÜ - 8 barÜ, 87 psi - 116 psi</td>
<td>6 barÜ - 8 barÜ, 87 psi - 116 psi</td>
</tr>
<tr>
<td><strong>Steam: Continuous operating temperature</strong></td>
<td>EPDM (FDA) 130 °C / 266 °F</td>
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</tr>
<tr>
<td><strong>Steam: Sterilization temperature (&lt; 30 min/d)</strong></td>
<td>EPDM (FDA) 150 °C / 302 °F</td>
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<td>EPDM (FDA) 150 °C / 302 °F</td>
</tr>
<tr>
<td><strong>Steam: Continuous operating temperature</strong></td>
<td>HNBR (FDA) 121 °C / 250 °F</td>
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</tr>
<tr>
<td><strong>Steam: Sterilization temperature (&lt; 30 min/d)</strong></td>
<td>HNBR (FDA) 140 °C / 284 °F</td>
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</tr>
<tr>
<td><strong>Steam: Continuous operating temperature</strong></td>
<td>FKM (FDA) Not suitable</td>
<td>Not suitable</td>
<td>Not suitable</td>
</tr>
<tr>
<td><strong>Steam: Sterilization temperature (&lt; 30 min/d)</strong></td>
<td>FKM (FDA) 121 °C / 250 °F</td>
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</tr>
<tr>
<td><strong>Hot water</strong></td>
<td>EPDM 130 °C / 266 °F</td>
<td>HNBR 130 °C / 266 °F</td>
<td>FKM 80 °C / 176 °F</td>
</tr>
<tr>
<td><strong>Aqueous caustic solution</strong></td>
<td>EPDM 80 °C / 176 °F (≤ 5.0%)</td>
<td>HNBR 80 °C / 176 °F (≤ 3.0%)</td>
<td>FKM 80 °C / 176 °F (≤ 5.0%)</td>
</tr>
<tr>
<td><strong>Aqueous acid</strong></td>
<td>EPDM 40 °C / 104 °F (≤ 3.0%)</td>
<td>HNBR 40 °C / 104 °F (≤ 1.5%)</td>
<td>FKM 60 °C / 140 °F (≤ 1.5%)</td>
</tr>
<tr>
<td><strong>Aqueous sanitizer</strong></td>
<td>EPDM 30 °C / 86 °F (≤ 0.7%)</td>
<td>HNBR Not suitable</td>
<td>FKM 30 °C / 86 °F (≤ 0.2%)</td>
</tr>
<tr>
<td><strong>CV-value A-B</strong></td>
<td>85,8 m³/h</td>
<td>152 m³/h</td>
<td>225 m³/h</td>
</tr>
<tr>
<td><strong>CV-value C-E</strong></td>
<td>182 m³/h</td>
<td>317 m³/h</td>
<td>498 m³/h</td>
</tr>
<tr>
<td><strong>CV-value A-C</strong></td>
<td>58,9 m³/h</td>
<td>82,0 m³/h</td>
<td>115 m³/h</td>
</tr>
<tr>
<td><strong>CV-value C-A</strong></td>
<td>46,7 m³/h</td>
<td>72,8 m³/h</td>
<td>103 m³/h</td>
</tr>
<tr>
<td><strong>Particulate size for bulky media</strong></td>
<td>≤10mm</td>
<td>≤12,5mm</td>
<td>≤16mm</td>
</tr>
</tbody>
</table>

* See above for CV-values
** See above for particulate size