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Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

сайт: [www.acvatix.nt-rt.ru](http://www.acvatix.nt-rt.ru) || эл. почта: [atv@nt-rt.ru](mailto:atv@nt-rt.ru)

## ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ НА ФЛАНЦЕВЫЕ КЛАПАНЫ VXF63

ACVATIX™

### 3-port valves with flanged connections, PN 40

From the large-stroke valve line



- High-performance valves for medium temperatures from -25...220 °C
- Valve body of cast steel GP240GH
- DN 15...150
- $k_{vs}$  0.2...315 m<sup>3</sup>/h
- Flange type 21, flange design B
- VVF63..K with pressure compensation to handle high differential pressure
- Equipable with electro-hydraulic actuators SKD., SKB., SKC..


#### Use

# SIEMENS

In boiler, district heating and refrigeration plants, cooling towers, heating groups, and in air handling units as control or shutoff valves.

For use in closed or open hydraulic circuits (observe cavitation).

## Type summary

|  | Valves  | Actuators   |                   |  |                | SKD.. <sup>1)</sup> | SKB..             | SKC..           |                   |                 |                   |
|--|---|-------------|-------------------|--|----------------|---------------------|-------------------|-----------------|-------------------|-----------------|-------------------|
|  |   | PN 40       | Stroke            |  |                | 20 mm               |                   | 40 mm           |                   |                 |                   |
|  |   |             | Positioning force |  |                | 1000 N              | 2800 N            | 2800 N          |                   |                 |                   |
|  |   | Data sheet  |                   |  | N4561          | N4664               | N4566             |                 |                   |                 |                   |
|  |  | Stock no.   | DN                | k <sub>vs</sub><br>[m <sup>3</sup> /h] | S <sub>v</sub> | Δp <sub>s</sub>     | Δp <sub>max</sub> | Δp <sub>s</sub> | Δp <sub>max</sub> | Δp <sub>s</sub> | Δp <sub>max</sub> |
|  |   |             |                   |  |                |                     |                   | [kPa]           |                   |                 |                   |
| <b>Liquids</b><br>Preferred flow direction A-AB with liquids for low noise operation and high kvs-values with all actuator types | VVF63.15-0.2 <sup>2)</sup>  | S55210-V100 | 15                | 0.2                                    | > 50           | 4000                | 2000              | 4000            | 2000              |                 |                   |
|  | VVF63.15-0.32 <sup>2)</sup>   | S55210-V101 | 15                | 0.32                                   |                |                     |                   |                 |                   |                 |                   |
|  | VVF63.15-0.5 <sup>2)</sup>  | S55210-V102 | 15                | 0.5                                    |                |                     |                   |                 |                   |                 |                   |
|  | VVF63.15-0.8 <sup>2) 3)</sup>   | S55210-V103 | 15                | 0.8                                    |                |                     |                   |                 |                   |                 |                   |
|  | VVF63.15-1.25 <sup>2) 3)</sup>  | S55210-V104 | 15                | 1.25                                   |                |                     |                   |                 |                   |                 |                   |
|  | VVF63.15-2 <sup>2) 3)</sup>   | S55210-V105 | 15                | 2                                      |                |                     |                   |                 |                   |                 |                   |
|  | VVF63.15-3.2 <sup>2) 3)</sup>   | S55210-V106 | 15                | 3.2                                    |                |                     |                   |                 |                   |                 |                   |
|  | VVF63.20-6.3  | S55210-V107 | 20                | 6.3                                    |                |                     |                   |                 |                   |                 |                   |
|  | VVF63.25-5 <sup>2) 3)</sup>   | S55210-V108 | 25                | 5                                      |                |                     |                   |                 |                   |                 |                   |
|  | VVF63.25-8 <sup>2) 3)</sup>   | S55210-V109 | 25                | 8                                      |                |                     |                   |                 |                   |                 |                   |
|  | VVF63.32-16   | S55210-V110 | 32                | 16                                     | > 100          | 1200                | 1100              | 3200            | 1800              |                 |                   |
|  | VVF63.40-12.5 <sup>2)</sup>   | S55210-V111 | 40                | 12.5                                   |                |                     |                   |                 |                   |                 |                   |
|  | VVF63.40-20 <sup>2)</sup>   | S55210-V112 | 40                | 20                                     |                |                     |                   |                 |                   |                 |                   |
|  | VVF63.50-31.5 <sup>2)</sup>   | S55210-V113 | 50                | 31.5                                   |                |                     |                   |                 |                   |                 |                   |
|  | VVF63.65-50 <sup>2)</sup>   | S55210-V114 | 65                | 50                                     |                |                     |                   |                 |                   |                 |                   |
|  | VVF63.80-80 <sup>2)</sup>   | S55210-V115 | 80                | 80                                     |                |                     |                   |                 |                   |                 |                   |
| VVF63.100-125 <sup>2)</sup>  | S55210-V116   | 100         | 125               |  |                |                     |                   |                 |                   |                 |                   |
| VVF63.125-200 <sup>2)</sup>  | S55210-V117   | 125         | 200               |  |                |                     |                   |                 |                   |                 |                   |
| VVF63.150-315 <sup>2)</sup>  | S55210-V118   | 150         | 315               |  |                |                     |                   |                 |                   |                 |                   |
| <b>Liquids and Steam</b><br>Compensated valves are optimized for a single flow direction for liquids and steam. DN 50..150: AB-A | VVF63.50-40K  | S55210-V119 | 50                | 36                                     | > 100          | 4000                | 1500              | 4000            | 2000              | -               | -                 |
|  | VVF63.65-63K  | S55210-V120 | 65                | 63                                     |                |                     |                   |                 |                   |                 |                   |
|  | VVF63.80-100K   | S55210-V121 | 80                | 100                                    |                |                     |                   |                 |                   |                 |                   |
|  | VVF63.100-150K  | S55210-V122 | 100               | 150                                    | > 50           | -                   | -                 | -               | -                 | 4000            | 2000              |
|  | VVF63.125-220K  | S55210-V123 | 125               | 220                                    |                |                     |                   |                 |                   |                 |                   |
| VVF63.150-315K   | S55210-V124   | 150         | 315               |  |                |                     |                   |                 |                   |                 |                   |

<sup>1)</sup> Usable up to a max. medium temperature of 150 °C

<sup>2)</sup> Valve with supplemental designation ..F (e.g. VVF63.25-10F) – with special flange can be ordered exclusively for France.

<sup>3)</sup> Valve with supplemental designation..L (e.g. VVF63.25-10L) – with parabolic plug can be ordered for special applications (low noise)



DN = Nominal size

k<sub>vs</sub> = Flow nominal value of cold water (5...30 °C) through the fully opened valve (H<sub>100</sub>) at a differential pressure of 100 kPa (1 bar)

S<sub>v</sub> = Rangeability

Δp<sub>s</sub> = Maximum permissible differential pressure at which the motorized valve still closes securely against the pressure

Δp<sub>max</sub> = Maximum permissible differential pressure across the valve's throughport for the entire positioning range of the motorized valve

| Valves  | Actuators   |             |  |  | SKD.. <sup>1)</sup> | SKB..                      | SKC..           |                   |                 |                   |   |
|---|---|-------------|--|--|---------------------|----------------------------|-----------------|-------------------|-----------------|-------------------|---|
|   | Stroke  |             |  |  | 20 mm               |                            | 40 mm           |                   |                 |                   |   |
|   | Positioning force   |             |  |  | 1000 N              | 2800 N                     | 2800 N          |                   |                 |                   |   |
| PN 40   | Data sheet  |             |  |  | N4561               | N4664                      | N4566           |                   |                 |                   |   |
|    | Stock no.   | DN          | k <sub>vs</sub><br>[m <sup>3</sup> /h] | S <sub>v</sub>                         | Δp <sub>s</sub>     | Δp <sub>max</sub>          | Δp <sub>s</sub> | Δp <sub>max</sub> | Δp <sub>s</sub> | Δp <sub>max</sub> |   |
| <b>Steam</b> <sup>2)</sup><br>Exclusive flow direction AB-A for steam. Also useful for maximum close-off pressure Δp <sub>s</sub> and maximum differential pressure in operation (Δp <sub>max</sub> ) with liquids. | VVF63.15-0.2  | S55210-V101 | 15                                     | 0.2                                    | > 50                | 4000                       | 2000            | 4000              | 2000            | -                 | - |
|   | VVF63.15-0.32   | S55210-V103 | 15                                     | 0.32                                   |                     |                            |                 |                   |                 |                   |   |
|   | VVF63.15-0.5  | S55210-V105 | 15                                     | 0.5                                    |                     |                            |                 |                   |                 |                   |   |
|   | VVF63.15-0.8  | S55210-V107 | 15                                     | 0.8                                    |                     |                            |                 |                   |                 |                   |   |
|   | VVF63.15-1.25   | S55210-V109 | 15                                     | 1.25                                   |                     |                            |                 |                   |                 |                   |   |
|   | VVF63.15-2  | S55210-V111 | 15                                     | 2                                      |                     |                            |                 |                   |                 |                   |   |
|   | VVF63.15-3.2  | S55210-V113 | 15                                     | 3.2                                    |                     |                            |                 |                   |                 |                   |   |
|   | VVF63.20-6.3 <sup>3)</sup>  | S55210-V116 | 20                                     | 5                                      |                     |                            |                 |                   |                 |                   |   |
|   | VVF63.25-5  | S55210-V117 | 25                                     | 5                                      |                     |                            |                 |                   |                 |                   |   |
|   | VVF63.25-8  | S55210-V119 | 25                                     | 8                                      |                     |                            |                 |                   |                 |                   |   |
|   | VVF63.32-16 <sup>3)</sup>   | S55210-V154 | 32                                     | 15                                     |                     |                            |                 |                   |                 |                   |   |
|   | VVF63.40-12.5   | S55210-V123 | 40                                     | 12.5                                   |                     |                            |                 |                   |                 |                   |   |
|   | VVF63.40-20   | S55210-V125 | 40                                     | 20                                     |                     |                            |                 |                   |                 |                   |   |
|   | VVF63.50-31.5   | S55210-V127 | 50                                     | 31.5                                   |                     |                            |                 |                   |                 |                   |   |
|   | VVF63.65-50   | S55210-V129 | 65                                     | 50                                     |                     |                            |                 |                   |                 |                   |   |
|   | VVF63.80-80   | S55210-V131 | 80                                     | 80                                     |                     |                            |                 |                   |                 |                   |   |
|   | VVF63.100-125   | S55210-V133 | 100                                    | 125                                    |                     |                            |                 |                   |                 |                   |   |
| VVF63.125-200   | S55210-V135   | 125         | 200                                    |  |                     |                            |                 |                   |                 |                   |   |
| VVF63.150-315 <sup>3)</sup>   | S55210-V155   | 150         | 280                                    |  |                     |                            |                 |                   |                 |                   |   |
|   |  | Stock no.   | DN                                     | k <sub>vs</sub><br>[m <sup>3</sup> /h] | S <sub>v</sub>      | Δp <sub>max</sub><br>[kPa] |                 |                   |                 |                   |   |
| <b>Liquids</b>  | VXF63.15-1.6  | S55210-V131 | 15                                     | 1.6                                    | > 100               | 2000                       | 200             | 2000              | 200             | -                 | - |
|   | VXF63.15-2.5  | S55210-V132 | 15                                     | 2.5                                    |                     |                            |                 |                   |                 |                   |   |
|   | VXF63.15-4  | S55210-V133 | 15                                     | 4                                      |                     |                            |                 |                   |                 |                   |   |
|   | VXF63.20-6.3  | S55210-V134 | 20                                     | 6.3                                    |                     |                            |                 |                   |                 |                   |   |
|   | VXF63.25-6.3  | S55210-V135 | 25                                     | 6.3                                    |                     |                            |                 |                   |                 |                   |   |
|   | VXF63.25-10   | S55210-V136 | 25                                     | 10                                     |                     |                            |                 |                   |                 |                   |   |
|   | VXF63.32-16   | S55210-V137 | 32                                     | 16                                     |                     |                            |                 |                   |                 |                   |   |
|   | VXF63.40-16   | S55210-V138 | 40                                     | 16                                     |                     |                            |                 |                   |                 |                   |   |
|   | VXF63.40-25   | S55210-V139 | 40                                     | 25                                     |                     |                            |                 |                   |                 |                   |   |
|   | VXF63.50-31.5   | S55210-V140 | 50                                     | 31.5                                   |                     |                            |                 |                   |                 |                   |   |
|   | VXF63.65-50   | S55210-V141 | 65                                     | 50                                     |                     |                            |                 |                   |                 |                   |   |
|   | VXF63.80-80   | S55210-V142 | 80                                     | 80                                     |                     |                            |                 |                   |                 |                   |   |
|   | VXF63.100-125   | S55210-V143 | 100                                    | 125                                    |                     |                            |                 |                   |                 |                   |   |
|   | VXF63.125-200   | S55210-V144 | 125                                    | 200                                    |                     |                            |                 |                   |                 |                   |   |
|   | VXF63.150-315   | S55210-V145 | 150                                    | 315                                    |                     |                            |                 |                   |                 |                   |   |

<sup>1)</sup> Usable up to a max. medium temperature of 150 °C

<sup>2)</sup> Operate with opposite flow direction with steam

<sup>3)</sup> Reduced k<sub>vs</sub> value

**Note**




When using a stem heating element with a medium temperature of below  $-5\text{ }^{\circ}\text{C}$ , the stem sealing gland must be replaced. In this case, the sealing gland must be ordered separately.

| DN          | Stock number |
|-------------|--------------|
| DN 15...50  | 4 284 8806 0 |
| DN 65...150 | 4 679 5629 0 |

Spare parts, Rev.-No.

See page 18

**Accessories**

| Product number | Stock number | Description          | Note   |  |
|----------------|--------------|----------------------|--|--|
| ASZ6.6         | S55845-Z108  | Stem heating element | Required for medium temperatures $< 0\text{ }^{\circ}\text{C}$   |   |
| -              | 4 284 8806 0 | Stem sealing gland   | When using valves of the V..F63.. lines DN 15...50 with a stem heating element and a medium temperature below $-5\text{ }^{\circ}\text{C}$ , the stem sealing gland must be replaced. With the gland 428488060 the valve can be used with water, water with antifreeze and brines between $-25\text{ }^{\circ}\text{C}$ and $150\text{ }^{\circ}\text{C}$ .  |   |
| -              | 4 679 5629 0 | Stem sealing gland   | When using valves of the V..F63.. lines DN 65...150 with a stem heating element and a medium temperature below $-5\text{ }^{\circ}\text{C}$ , the stem sealing gland must be replaced. With the gland 467956290 the valve can be used with water, water with antifreeze and brines between $-25\text{ }^{\circ}\text{C}$ and $150\text{ }^{\circ}\text{C}$ . |  |

## Equipment combinations

| Product number        | Description           | Stroke | Positioning force | Operating voltage | Positioning signal                  | Spring return time | Positioning time                    | LED        | Manual adjuster                 | Auxiliary functions            |   |                                 |       |   |
|-----------------------|-----------------------|--------|-------------------|-------------------|-------------------------------------|--------------------|-------------------------------------|------------|---------------------------------|--------------------------------|---|---------------------------------|-------|---|
| SKD32.21              | SKD32.21              | 20 mm  | 1000 N            | AC 230 V          | 3-position                          | 8 s                | Opening: 30 s<br>Closing: 10 s      | -          | Turn,<br>Position is maintained | 1), 2),                        |   |                                 |       |   |
| SKD32.50              | SKD32.50              |        |                   |                   |                                     | -                  | 120 s                               |            |                                 |                                |   |                                 |       |   |
| SKD32.51              | SKD32.51              |        |                   |                   |                                     | 8 s                |                                     |            |                                 |                                |   |                                 |       |   |
| SKD60                 | SKD60                 |        |                   | 20 mm             | 1000 N                              | AC 24 V            | 0...10 V<br>4...20 mA<br>0...1000 Ω | -          |                                 | Opening: 30 s<br>Closing: 15 s | ✓ | Turn,<br>Position is maintained | 3)    |   |
| SKD62<br>SKD62U       | SKD62<br>SKD62U       |        |                   |                   |                                     |                    |                                     | 15 s       |                                 |                                |   |                                 |       |   |
| SKD62UA               | SKD62UA               |        |                   |                   |                                     |                    |                                     | 3-position |                                 | -                              |   |                                 | 120 s | - |
| SKD82.50<br>SKD82.50U | SKD82.50<br>SKD82.50U |        |                   |                   |                                     |                    |                                     |            |                                 |                                |   |                                 |       |   |
| SKD82.51<br>SKD82.51U | SKD82.51<br>SKD82.51U | 8 s    |                   |                   |                                     |                    |                                     |            |                                 |                                |   |                                 |       |   |
| SKB32.50              | SKB32.50              | 20 mm  | 2800 N            |                   |                                     |                    |                                     | AC 230 V   | 3-position                      | -                              |   |                                 | 120 s | - |
| SKB32.51              | SKB32.51              |        |                   | 10 s              |                                     |                    |                                     |            |                                 |                                |   |                                 |       |   |
| SKB60                 | SKB60                 |        |                   | -                 |                                     |                    |                                     |            |                                 |                                |   |                                 |       |   |
| SKB62<br>SKB62U       | SKB62<br>SKB62U       |        |                   | AC 24 V           | 0...10 V<br>4...20 mA<br>0...1000 Ω | 10 s               | Opening:<br>120 s<br>Closing: 10 s  | ✓          | 3)                              |                                |   |                                 |       |   |
| SKB62UA               | SKB62UA               |        |                   |                   |                                     | -                  |                                     |            |                                 |                                |   |                                 |       |   |
| SKB82.50<br>SKB82.50U | SKB82.50<br>SKB82.50U |        |                   | 3-position        | -                                   | 120 s              | -                                   |            |                                 |                                |   |                                 |       |   |
| SKB82.51<br>SKB82.51U | SKB82.51<br>SKB82.51U |        |                   |                   |                                     |                    |                                     | 10 s       |                                 |                                |   |                                 |       |   |
| SKC32.60              | SKC32.60              | 40 mm  | 2800 N            | AC 230 V          | 3-position                          | -                  | 120 s                               | -          | Turn,<br>Position is maintained | 1), 2),                        |   |                                 |       |   |
| SKC32.61              | SKC32.61              |        |                   |                   |                                     | 18 s               |                                     |            |                                 |                                |   |                                 |       |   |
| SKC60                 | SKC60                 |        |                   |                   |                                     | -                  |                                     |            |                                 |                                |   |                                 |       |   |
| SKC62<br>SKC62U       | SKC62<br>SKC62U       |        |                   | AC 24 V           | 0...10 V<br>4...20 mA<br>0...1000 Ω | 20 s               | Opening:<br>120 s<br>Closing: 20 s  | ✓          |                                 | 3)                             |   |                                 |       |   |
| SKC62UA               | SKC62UA               |        |                   |                   |                                     | -                  |                                     |            |                                 |                                |   |                                 |       |   |
| SKC82.60<br>SKC82.60U | SKC82.60<br>SKC82.60U |        |                   | 3-position        | -                                   | 120 s              | -                                   |            |                                 |                                |   |                                 |       |   |
| SKC82.61<br>SKC82.61U | SKC82.61<br>SKC82.61U |        |                   |                   |                                     |                    |                                     | 18 s       |                                 |                                |   |                                 |       |   |

- 1) Auxiliary switch (optional)
- 2) Potentiometer (optional)
- 3) Position feedback, forced control, selection of valve characteristic
- 4) Plus sequence control, stroke limitation, and selection of acting direction

## Ordering

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### Example

| Product number | Stock number | Description                           |
|----------------|--------------|---------------------------------------|
| VXF63.32-16    | S55210-V137  | 3-port valve with flange, PN 40, DN32 |
|                |              |                                       |

### Delivery

Valves, actuators and accessories are packed and delivered as separate items.

### Note

Counter-flanges, bolts and gaskets must be provided on site.

## Product documentation





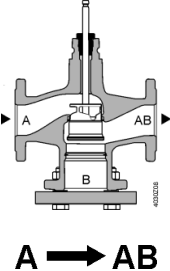
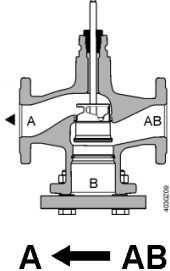
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|                         |                        |   |
|-------------------------|------------------------|---|
| • Mounting Instructions | M4030<br>74 319 0749 0 | DN 15...150   |
| • Basic documentation   | P4030                  | Contains background information and technical basic knowledge of valves |

## Technical and mechanical design




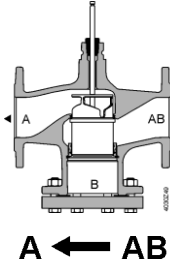
The illustrations below show the basic design of the valves. Constructional features, such as the shape of plugs, may differ.

### 2-port valves

|  Liquids  |  Steam ( Liquids possible )                       |
|--|--|
|  Closing against the pressure                     |  Closing with the pressure                        |
|  <p style="text-align: center;"><b>A → AB</b></p> |  <p style="text-align: center;"><b>A ← AB</b></p> |

### 2-port valves pressure compensated




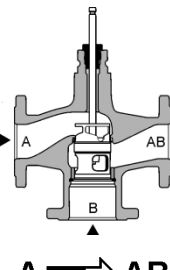
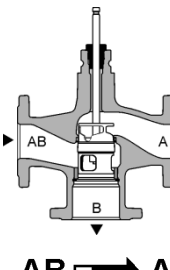
The VVF63..K valves use a pressure-compensated plug. This enables the same type of actuators to be used for the control of volumetric flow at higher differential pressures.

|   DN 50...150 Liquids and Steam |
|---|
|  Closing with the pressure   |
|  <p style="text-align: center;"><b>A ← AB</b></p>   |

Note

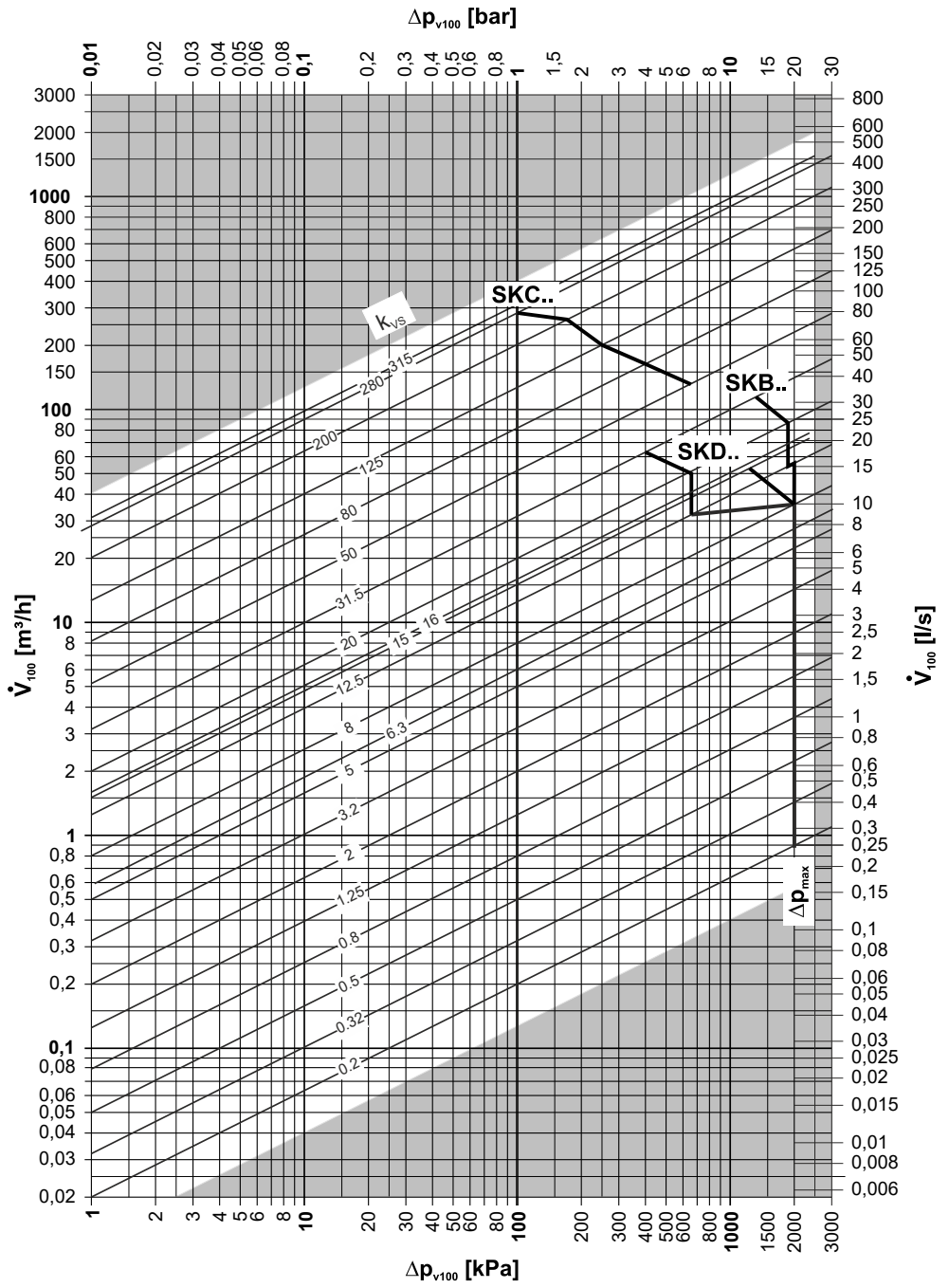
**2-port valves do not become 3-port valves by removing the blank flange!**

### 3-port valves

|  Liquids   |   |
|---|---|
|  Mixing valve (preferred use)                                    |  Diverting valve   |
|  <p style="text-align: center;"><b>A T → AB</b><br/><b>B</b></p> |  <p style="text-align: center;"><b>AB → A</b><br/><b>B</b></p> |

# Sizing

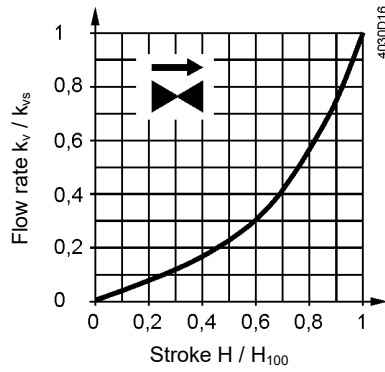
## Flow chart



$\Delta p_{max}$  values apply for the mixing function.  $\Delta p_{max}$  values for the diverting function see table "Type summary", page 3



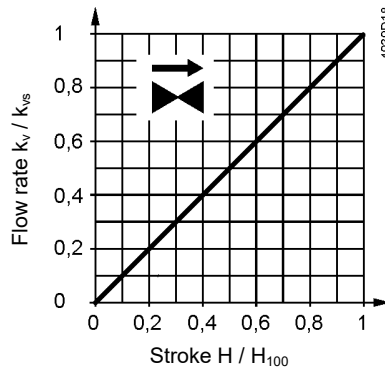
**Valve characteristics**  
**2-port valves**



0...30 %: Linear  
30...100 %: Equal percentage  
 $n_{gl} = 3$  to VDI / VDE 2173

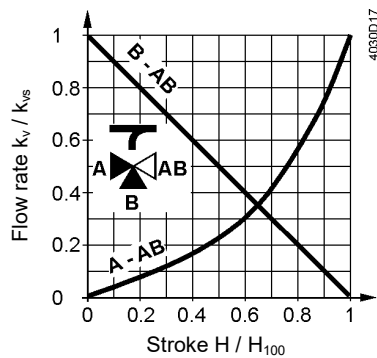
For high  $k_{vs}$  values the valve characteristic is optimized for maximum volumetric flow  $k_{V100}$ .

For product lines:  
VVF63.125-220K  
VVF63.150-315K



0...100 %: Linear

**3-port valves**



**Throughport A-AB**

0...30 %: Linear  
30...100 %: Equal percentage  
 $n_{gl} = 3$  to VDI / VDE 2173

For high  $k_{vs}$  values the valve characteristic is optimized for maximum volumetric flow  $k_{V100}$ .

**Bypass B-AB**

0...100 %: Linear

Port AB = constant volumetric flow

Port A = variable volumetric flow

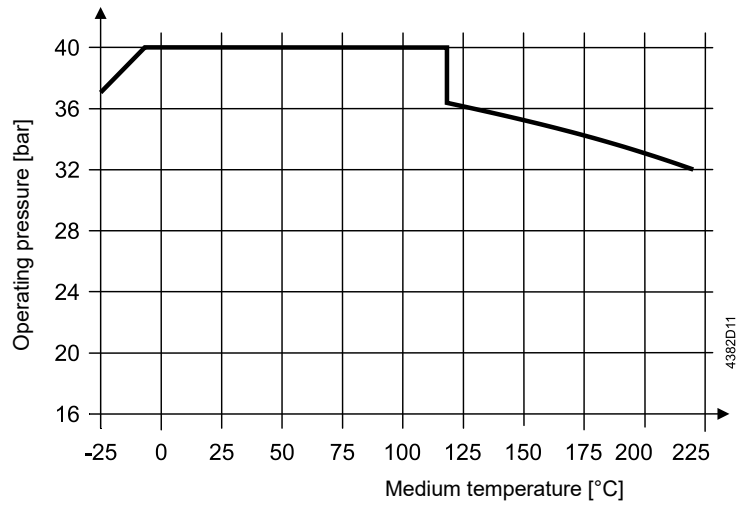
Port B = Bypass (variable volumetric flow)

**Mixing:** Volumetric flow from port A and port B to port AB

**Diverting:** Volumetric flow from port AB to port A and port B

**Operating pressure and medium temperature**

**Liquids**  
with V..F63..

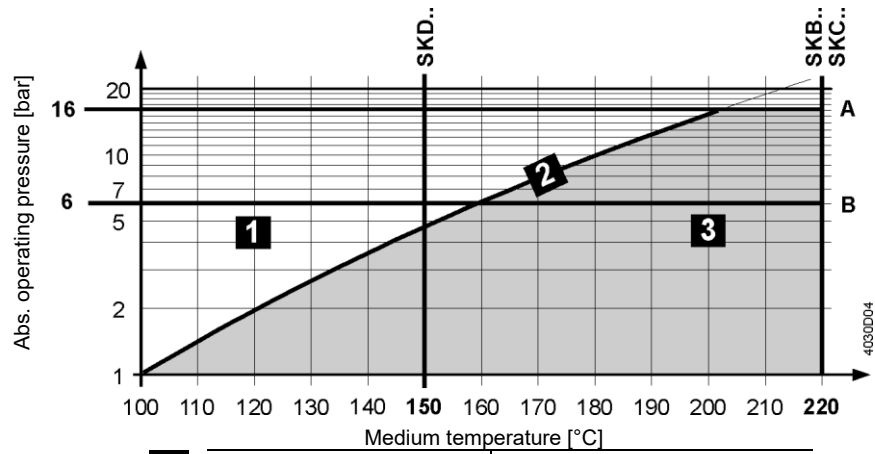


**Operating pressure and operating temperatures according to ISO 7005, EN 1092, DIN 4747 and EN 12284**

Notes

All relevant local directives must be observed

**Saturated steam**  
**Superheated steam**  
with VVF63..



|          |                                      |                             |
|----------|--------------------------------------|-----------------------------|
| <b>1</b> | Water                                | -                           |
| <b>2</b> | Wet steam                            | To be avoided               |
| <b>3</b> | Saturated steam<br>Superheated steam | Permissible operating range |
| A        | Subcritical pressure ratio           |                             |
| B        | Supercritical pressure ratio         |                             |

## Medium compatibility and temperature ranges

|  | Temperature range     |                       | VVF63.. | VXF63.. | VWF63..K        |   |
|--|-----------------------|-----------------------|---------|---------|-----------------|---|
|  | T <sub>min</sub> [°C] | T <sub>max</sub> [°C] |         |         |                 |   |
| Cold water   | 1                     | 25                    | ■       | ■       | ■               | -   |
| Low-temperature hot water                                | 1                     | 130                   | ■       | ■       | ■               | -   |
| High-temperature hot water                               | 130                   | 150                   | ■       | ■       | ■               | -   |
|  | 150                   | 180                   | ■       | ■       | ■               | -   |
|  | 180                   | 220                   | ■       | ■       | ■               | -   |
| Water with antifreeze                                    | -25                   | 130                   | ■       | ■       | - <sup>1)</sup> | V..F63: For medium temperatures below -5 °C, the stem sealing gland must be replaced (DN15..50: 4 284 8806 0) (DN 65..150: 4 679 5629 0). |
|  | -10                   | 130                   | ■       | ■       | - <sup>1)</sup> |   |
|  | -5                    | 130                   | ■       | ■       | ■               |   |
|  | 130                   | 150                   | ■       | ■       | ■               |   |
| Cooling water  | 1                     | 25                    | ■       | ■       | ■               | Open circuits   |
| Brines   | -25                   | 130                   | ■       | ■       | - <sup>1)</sup> | V..F63: For medium temperatures below -5 °C, the stem sealing gland must be replaced (DN15..50: 4 284 8806 0) (DN 65..150: 4 679 5629 0). |
|  | -10                   | 130                   | ■       | ■       | - <sup>1)</sup> |   |
|  | -5                    | 130                   | ■       | ■       | ■               |   |
|  | 130                   | 150                   | ■       | ■       | ■               |   |
| Saturated steam  | 100                   | 150                   | ■       | -       | ■               | -   |
|  | 150                   | 200                   | ■       | -       | ■               | -   |
|  | 200                   | 220                   | ■       | -       | ■               | -   |
| Superheated steam  | 120                   | 150                   | ■       | -       | ■               | Min. dryness at inlet: 0.98   |
|  | 150                   | 220                   | ■       | -       | ■               |   |
| Heat transfer oils                                       | 20                    | 220                   | ■       | ■       | ■               | On the basis of mineral oil, Thermal oil  |
| Super-clean water (Demineralized and deionized water)    | 1                     | 150                   | -       | -       | -               | -   |
| Demineralized water according to VDI2035 / SWKI_BT102-01 | 1                     | 130                   | ■       | ■       | ■               | -   |

<sup>1)</sup> Differentiation due to saturated steam curve

<sup>2)</sup> Open circuits

<sup>3)</sup> VVF63..K can't be used with media below -5 °C due to the compensation sealing material

## Fields of use

| Fields of use       |                              | Valve   |         |
|---------------------|------------------------------|---------|---------|
|                     |                              | VVF63.. | VXF63.. |
| <b>Generation</b>   | Boiler plants                | ■       | ■       |
|                     | District heating plants      | ■       | -       |
|                     | Refrigeration plants         | ■       | ■       |
|                     | Cooling towers <sup>1)</sup> | ■       | ■       |
| <b>Distribution</b> | Heating groups               | ■       | ■       |
|                     | Air handling units           | ■       | ■       |

<sup>1)</sup> Open circuits

## Engineering notes

### Mounting location

Preferably mount the valves at the return, as the temperature is lower there and the strain on the stem sealing gland is lower.

### Dirt trap

Mount a dirt filter or dirt trap before the valve to ensure proper functioning, and a long service life of the valve.  
Remove dirt, welding beads, etc. from the valves and pipes.

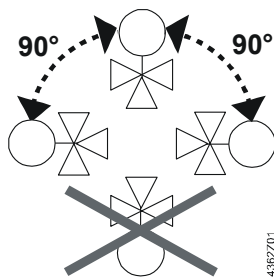
### Cavitation

Cavitation can be avoided by limiting the pressure differential across the valve depending on the medium temperature and the prepressure.

## Mounting notes

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Mounting position



Mounting positions apply to both 2- and 3-port valves.

## Commissioning notes

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**The valve may be put into operation only if actuator and valve are correctly assembled.**

Note

Ensure that actuator stem and valve stem are rigidly connected in all positions.

Function check

| Valve               | Throughport A→AB or AB→A | Bypass B→AB |
|---------------------|--------------------------|-------------|
| Valve stem extends  | Closes                   | Opens       |
| Valve stem retracts | Opens                    | Closes      |

## Maintenance notes

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The valves are maintenance-free.



When servicing valves or actuators:

- Deactivate the pump and turn off the power supply
- Close the shutoff valves
- Fully reduce the pressure in the piping system and allow pipes to completely cool down

If necessary, disconnect the electrical wires.

Disposal

Do not dispose of the device as unsorted municipal waste.

- Special handling of individual components may be mandated by law or make ecological sense.
- Observe all local and currently applicable laws and regulations.

## Warranty

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Application-related technical data are guaranteed only when the valves are used in connection with the Siemens actuators listed under "Equipment combinations", page 3.

When used with actuators of other manufacture, any warranty by Siemens becomes void.

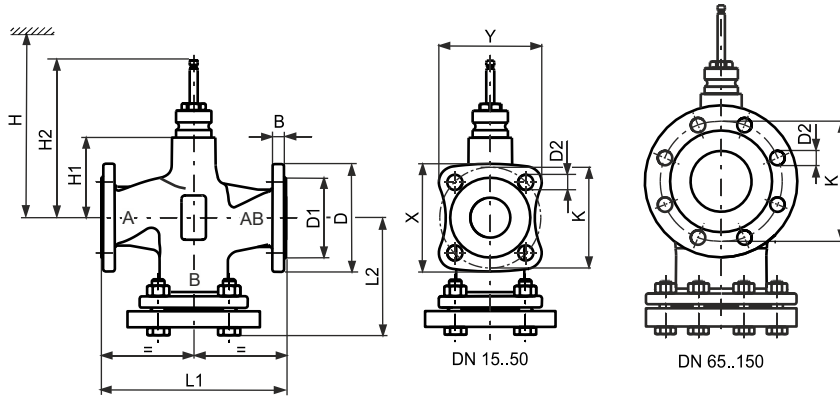
## Technical Data

|                          |  |   |
|--------------------------|--|---|
| Functional data          | PN class   | PN 40   |
|                          | Connection   | Flange  |
|                          | Operating pressure                                       | See Section "Operating pressure and medium temperature" page 11                                       |
|                          | Valve characteristics <sup>1)</sup>                      | See section "Valve characteristics", page 9   |
|                          | Leakage rate Throughport                                 | DN 15...150: 0...0.01 % of $k_{vs}$ value (Class IV)  |
|                          | Bypass Bypass  | 0.5...2 % of $k_{vs}$ value with SKD..., SKB..., SKC..  |
|                          | Permissible media  | See table "Medium compatibility and temperature ranges", page 11<br>Heat transfer oils                |
|                          | Medium temperature                                       | -25...220 °C <sup>2)</sup><br>VVF63..K: -5...220 °C   |
|                          | Rangeability   | DN15 $k_{vs}$ 0.2 ... 1.25: >50<br>DN15 $k_{vs}$ 2 ... DN150: >100                                    |
|                          | Nominal stroke   | Up to DN 50: 20 mm<br>From DN 65: 40 mm   |
| Materials                | Valve body   | DN 15...150: cast steel GP240GH   |
|                          | Blank flange VVF..                                       | DN 15...150: P265GH   |
|                          | Valve stem, seat, plug                                   | Stainless steel   |
|                          | Stem sealing gland                                       | Stainless steel<br>DN 15...150: FEPM (silicone-free)  |
|                          | Compensation sealing                                     | Stainless steel<br>DN 50...150: FEPM (silicone-free)  |
| Norms and directives     | Pressure Equipment Directive                             | PED 2014/68/EU  |
|                          | Pressure Accessories                                     | Scope: Article 1, section 1<br>Definition: Article 2, section 5                                       |
|                          | Liquid group 2:  |   |
|                          | ≤ DN 40  | without CE-marking,<br>as per article 4, section 3<br>(sound engineering practice) <sup>3)</sup>      |
|                          | DN 50...80   | Category I, Module A, with CE-marking,<br>as per article 14, section 2                                |
|                          | DN 100...150   | Category II, Module A2, with CE-marking,<br>as per article 14, section 2<br>notified body number 0036 |
|                          | EU Conformity (CE)                                       |   |
|                          | DN 50...150  | A5W00006523 <sup>4)</sup>   |
|                          | PN class   | ISO 7268  |
|                          | Operating pressure                                       | ISO 7005, EN 1092, DIN 4747, EN 12284   |
| Flanges                  | ISO 7005   |   |
| Length of flanged valves | DIN EN 558-1, line 1                                     |   |
| Valve characteristic     | VDI 2173   |   |
| Leakage rate             | Throughport, Bypass according to<br>EN 60534-4 / EN 1349 |   |
| Water treatment          | VDI 2035   |   |

|                             |  |                                |               |
|-----------------------------|--|--------------------------------|---------------|
| Environmental conditions    | Storage: IEC 60721-3-1   | Class                          | 1K3           |
|                             |  | Temperature                    | -15...55 °C   |
|                             |  | Rel. humidity                  | 5...95 % r.h. |
|                             | Transport: IEC 60721-3-2   | Class                          | 2K3, 2M2      |
|                             |  | Temperature                    | -30...65 °C   |
|                             |  | Rel. humidity                  | < 95 % r.H.   |
|                             | Operation: IEC 60721-3-3   | Class                          | 3K5, 3Z11     |
|                             |  | Temperature                    | -15...55 °C   |
|                             |  | Rel. humidity                  | 5...95 % r.h. |
| Environmental compatibility | The product environmental declaration A5W00049179 <sup>4)</sup> , A5W00049180 <sup>4)</sup> and A5W00049181 <sup>4)</sup> contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal). |                                |               |
| Dimensions / Weight         | Dimensions   | See „Dimensions“, page 15 + 16 |               |
|                             | Weight   | See „Dimensions“, page 15 + 16 |               |

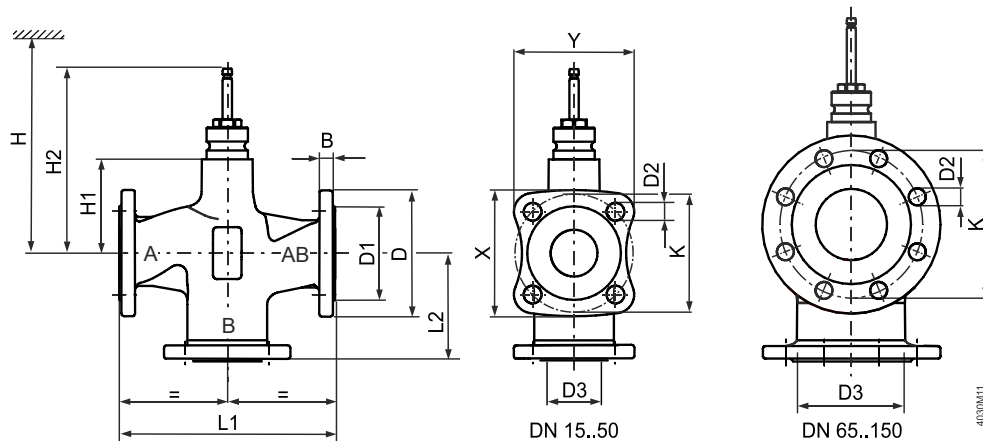
## Dimensions

### VVF63..



| Product number | DN    | kg    | B   | Ø D | Ø D1    | Ø D2    | L1  | L2    | X     | Y     | Ø K   | H1    | H2    | H   |     |     |
|----------------|-------|-------|-----|-----|---------|---------|-----|-------|-------|-------|-------|-------|-------|-----|-----|-----|
|                |       |       |     |     |         |         |     |       |       |       |       |       |       | SKD | SKB | SKC |
| VVF63..        | 15    | 5.3   | 14  | 95  | 46      | 14 (4x) | 130 | 87,5  | 79    | 76    | 65    | 63    | 159,5 | 563 | 638 | -   |
|                | 20    | 6.5   | 16  | 105 | 56      | 14 (4x) | 150 | 99,5  | 86,6  | 83    | 75    | 63    | 144,4 | 563 | 638 | -   |
|                | 25    | 7.5   | 15  | 115 | 65      | 14 (4x) | 160 | 104,5 | 94,4  | 90,1  | 85    | 63    | 159,5 | 563 | 638 | -   |
|                | 32    | 10.6  | 17  | 140 | 76      | 19 (4x) | 180 | 119   | 115,6 | 110,7 | 100   | 60    | 156,5 | 560 | 635 | -   |
|                | 40    | 12.3  | 16  | 150 | 84      | 19 (4x) | 200 | 129   | 123,2 | 117,8 | 110   | 60    | 156,5 | 560 | 635 | -   |
|                | 50    | 13.4  | 16  | 165 | 99      | 19 (4x) | 230 | 146   | 135,2 | 128,4 | 125   | 100   | 196,5 | 600 | 675 | -   |
|                | 65    | 29.1  | 17  | 185 | 118     | 19 (8x) | 290 | 178   | -     | -     | 145   | 115   | 231,5 | -   | -   | 690 |
|                | 80    | 36.9  | 17  | 200 | 132     | 19 (8x) | 310 | 190   | -     | -     | 160   | 115   | 231,5 | -   | -   | 690 |
|                | 100   | 49.8  | 17  | 235 | 156     | 23 (8x) | 350 | 212,5 | -     | -     | 190   | 146   | 262,5 | -   | -   | 721 |
| VVF63..K       | 125   | 73.0  | 17  | 270 | 184     | 28 (8x) | 400 | 242   | -     | -     | 220   | 159   | 275,5 | -   | -   | 734 |
|                | 150   | 102.4 | 17  | 297 | 211     | 28 (8x) | 480 | 284   | -     | -     | 250   | 186,5 | 303   | -   | -   | 762 |
|                | 50    | 17.4  | 16  | 165 | 99      | 19 (4x) | 230 | 146   | 135,2 | 128,4 | 125   | 100   | 196,5 | 600 | 675 | -   |
|                | 65    | 29.2  | 17  | 185 | 118     | 19 (8x) | 290 | 178   | -     | -     | 145   | 115   | 231,5 | -   | -   | 690 |
|                | 80    | 37.1  | 17  | 200 | 132     | 19 (8x) | 310 | 190   | -     | -     | 160   | 115   | 231,5 | -   | -   | 690 |
|                | 100   | 50.2  | 17  | 235 | 156     | 23 (8x) | 350 | 212,5 | -     | -     | 190   | 146   | 262,5 | -   | -   | 721 |
| 125            | 73.7  | 17    | 270 | 184 | 28 (8x) | 400     | 242 | -     | -     | 220   | 159   | 275,5 | -     | -   | 734 |     |
| 150            | 103.9 | 17    | 297 | 211 | 28 (8x) | 480     | 284 | -     | -     | 250   | 186,5 | 303   | -     | -   | 762 |     |

VXF63..





| Product number | DN  | K <sub>G</sub> | B  | Ø D | Ø D1 | Ø D2    | Ø D3 <sup>1)</sup> | L1  | L2  | X     | Y     | Ø K | H1    | H2    | H   |     |     |
|----------------|-----|----------------|----|-----|------|---------|--------------------|-----|-----|-------|-------|-----|-------|-------|-----|-----|-----|
|                |     |                |    |     |      |         |                    |     |     |       |       |     |       |       | SKD | SKB | SKC |
| VXF63..        | 15  | 4.3            | 14 | 95  | 46   | 14 (4x) | 25                 | 130 | 65  | 79    | 76    | 65  | 63    | 159,5 | 563 | 638 | -   |
|                | 20  | 5.2            | 16 | 105 | 56   | 14 (4x) | 35                 | 150 | 75  | 86,6  | 83    | 75  | 63    | 159,5 | 563 | 638 | -   |
|                | 25  | 6.0            | 15 | 115 | 65   | 14 (4x) | 38                 | 160 | 80  | 94,4  | 90,1  | 85  | 63    | 159,5 | 563 | 638 | -   |
|                | 32  | 8.0            | 17 | 140 | 76   | 19 (4x) | 46                 | 180 | 90  | 115,6 | 110,7 | 100 | 60    | 156,5 | 560 | 635 | -   |
|                | 40  | 9.4            | 16 | 150 | 84   | 19 (4x) | 57                 | 200 | 100 | 123,2 | 117,8 | 110 | 60    | 156,5 | 560 | 635 | -   |
|                | 50  | 13.5           | 16 | 165 | 99   | 19 (4x) | 69                 | 230 | 115 | 135,2 | 128,4 | 125 | 100   | 196,5 | 600 | 675 | -   |
|                | 65  | 23.5           | 17 | 185 | 118  | 19 (8x) | 86                 | 290 | 145 | -     | -     | 145 | 115   | 231,5 | -   | -   | 690 |
|                | 80  | 30.1           | 17 | 200 | 132  | 19 (8x) | 100                | 310 | 155 | -     | -     | 160 | 115   | 231,5 | -   | -   | 690 |
|                | 100 | 39.8           | 17 | 235 | 156  | 23 (8x) | 123                | 350 | 175 | -     | -     | 190 | 146   | 262,5 | -   | -   | 721 |
|                | 125 | 58.4           | 17 | 270 | 184  | 28 (8x) | 149                | 400 | 200 | -     | -     | 220 | 159   | 275,5 | -   | -   | 734 |
|                | 150 | 84.0           | 17 | 297 | 211  | 28 (8x) | 174                | 480 | 240 | -     | -     | 250 | 186,5 | 303   | -   | -   | 762 |



## Spare parts

### Stem sealing gland

| Product number                 | DN          | Stock number  | Comments  |   |
|--------------------------------|-------------|---------------|---|---|
| VVF63..<br>VXF63..<br>VVF63..K | DN 15...50  | 74 284 0061 0 | Standard version with FEPM-O-ring for medium temperatures between -5 °C and 220 °C.   |   |
| VVF63..<br>VXF63..<br>VVF63..K | DN 65...150 | S55846-Z114   | Standard version with FEPM-O-ring for medium temperatures between -5 °C and 220 °C.   |   |
| VVF63..<br>VXF63..             | DN 15...50  | 4 284 8806 0  | When operating with medium temperatures below -5 °C. With the gland 428488060 the valve can be used with water, water with antifreeze and brines between -25 °C and 150 °C. |  |
| VVF63..<br>VXF63..             | DN 65...150 | 4 679 5629 0  | When operating with medium temperatures below -5 °C. With the gland 467956290 the valve can be used with water, water with antifreeze and brines between -25 °C and 150 °C. |  |

