



Ordering

MSV-F2 valves - PN 16

| Picture | DN<br>(mm) | $k_{vs}$<br>(m <sup>3</sup> /h) | $T_{max.}$<br>(°C) | PN<br>(bar) | Code No.<br>(with needle test plugs) |
|---------|------------|---------------------------------|--------------------|-------------|--------------------------------------|
|         | 15         | 3.1                             | 130                | 16          | <b>003Z1085</b>                      |
|         | 20         | 6.3                             |                    |             | <b>003Z1086</b>                      |
|         | 25         | 9.0                             |                    |             | <b>003Z1087</b>                      |
|         | 32         | 15.5                            |                    |             | <b>003Z1088</b>                      |
|         | 40         | 32.3                            |                    |             | <b>003Z1089</b>                      |
|         | 50         | 53.8                            |                    |             | <b>003Z1061</b>                      |
|         | 65         | 93.4                            |                    |             | <b>003Z1062</b>                      |
|         | 80         | 122.3                           |                    |             | <b>003Z1063</b>                      |
|         | 100        | 200.0                           |                    |             | <b>003Z1064</b>                      |
|         | 125        | 304.4                           |                    |             | <b>003Z1065</b>                      |
|         | 150        | 400.8                           |                    |             | <b>003Z1066</b>                      |
|         | 200        | 872                             |                    |             | <b>003Z1140</b>                      |
|         | 250        | 1,238                           |                    |             | <b>003Z1141</b>                      |
|         | 300        | 1,662                           |                    |             | <b>003Z1142</b>                      |
|         | 350        | 2,359                           |                    |             | <b>003Z1143</b>                      |
|         | 400        | 3,516                           |                    |             | <b>003Z1144</b>                      |

MSV-F2 valves - PN 25

| Picture | DN<br>(mm) | $k_{vs}$<br>(m <sup>3</sup> /h) | $T_{max.}$<br>(°C) | PN<br>(bar) | Code No.<br>(with needle test plugs) |
|---------|------------|---------------------------------|--------------------|-------------|--------------------------------------|
|         | 15         | 3.1                             | 150                | 25          | <b>003Z1092</b>                      |
|         | 20         | 6.3                             |                    |             | <b>003Z1093</b>                      |
|         | 25         | 9.0                             |                    |             | <b>003Z1094</b>                      |
|         | 32         | 15.5                            |                    |             | <b>003Z1095</b>                      |
|         | 40         | 32.3                            |                    |             | <b>003Z1096</b>                      |
|         | 50         | 53.8                            |                    |             | <b>003Z1070</b>                      |
|         | 65         | 93.4                            |                    |             | <b>003Z1071</b>                      |
|         | 80         | 122.3                           |                    |             | <b>003Z1072</b>                      |
|         | 100        | 200.0                           |                    |             | <b>003Z1073</b>                      |
|         | 125        | 304.4                           |                    |             | <b>003Z1074</b>                      |
|         | 150        | 400.8                           |                    |             | <b>003Z1075</b>                      |
|         | 200        | 872                             |                    |             | <b>003Z1145</b>                      |
|         | 250        | 1,238                           |                    |             | <b>003Z1146</b>                      |
|         | 300        | 1,662                           |                    |             | <b>003Z1147</b>                      |
|         | 350        | 2,359                           |                    |             | <b>003Z1148</b>                      |
|         | 400        | 3,516                           |                    |             | <b>003Z1149</b>                      |

Accessories

| Type   | Code No.        |
|--|-----------------|
| Standard test plugs with O-ring, 2 pcs.            | <b>003Z0104</b> |
| Extension piece for test plugs 45 mm, 2 pcs.       | <b>003Z0103</b> |
| Extended test plugs mounted under pressure, 2 pcs. | <b>003Z3946</b> |
| Flow measuring instrument PFM100 (10bar)           | <b>003L8260</b> |
| Flow measuring instrument PFM1000 (10 bar)         | <b>003Z8260</b> |
| Flow measuring instrument PFM1000 (20 bar)         | <b>003Z8261</b> |

| Type       | Code No.   |                 |
|------------|------------|-----------------|
| Hand-wheel | DN 15-50   | <b>003Z0179</b> |
|            | DN 65-150  | <b>003Z0180</b> |
|            | DN 200     | <b>003Z1181</b> |
|            | DN 250-300 | <b>003Z1182</b> |
|            | DN 350-400 | <b>003Z1183</b> |

Technical data

MSV-F2 valves - PN 16

|                       |   |     |     |     |      |      |      |      |       |                 |                         |                        |     |      |      |      |      |
|-----------------------|---|-----|-----|-----|------|------|------|------|-------|-----------------|-------------------------|------------------------|-----|------|------|------|------|
| Nominal diameter      | DN  | 15  | 20  | 25  | 32   | 40   | 50   | 65   | 80    | 100             | 125                     | 150                    | 200 | 250  | 300  | 350  | 400  |
| $k_{vs}$              | m <sup>3</sup> /h   | 3.1 | 6.3 | 9.0 | 15.5 | 32.3 | 53.8 | 93.4 | 122.3 | 200.0           | 304.4                   | 400.8                  | 872 | 1238 | 1662 | 2359 | 3516 |
| Nominal pressure      | bar   | 16  |     |     |      |      |      |      |       |                 |                         |                        |     |      |      |      |      |
| Max. pressure drop    |   | 1.5 |     |     |      |      |      |      |       |                 |                         |                        |     |      |      |      |      |
| Leakage rate          | Grade A; According to ISO5208, Table 5 (No visible leakage)   |     |     |     |      |      |      |      |       |                 |                         |                        |     |      |      |      |      |
| Flow medium           | Water and water mixtures with secondary coolants (like glycols <sup>1)</sup> ) for closed heating and cooling systems |     |     |     |      |      |      |      |       |                 |                         |                        |     |      |      |      |      |
| Max. flow temperature | °C  | 130 |     |     |      |      |      |      |       |                 |                         |                        |     |      |      |      |      |
| Connections           | Flanges according to EN 1092-2  |     |     |     |      |      |      |      |       |                 |                         |                        |     |      |      |      |      |
| Weight                | kg  | 2.3 | 2.9 | 3.8 | 5.6  | 7.2  | 9.4  | 17   | 21    | 32              | 44                      | 56.5                   | 98  | 153  | 247  | 374  | 525  |
| <b>Material</b>       |   |     |     |     |      |      |      |      |       |                 |                         |                        |     |      |      |      |      |
| Body                  | Cast iron EN-GJL 250 (GG 25)  |     |     |     |      |      |      |      |       |                 |                         |                        |     |      |      |      |      |
| Seat sealing          | EPDM  |     |     |     |      |      |      |      |       |                 |                         |                        |     |      |      |      |      |
| Cone                  | CW602N  |     |     |     |      |      |      |      |       | Stainless steel | Stainless steel/ CW602N | Casted stainless steel |     |      |      |      |      |

<sup>1)</sup> Please verify compability between materials and secondary coolants with supplier.

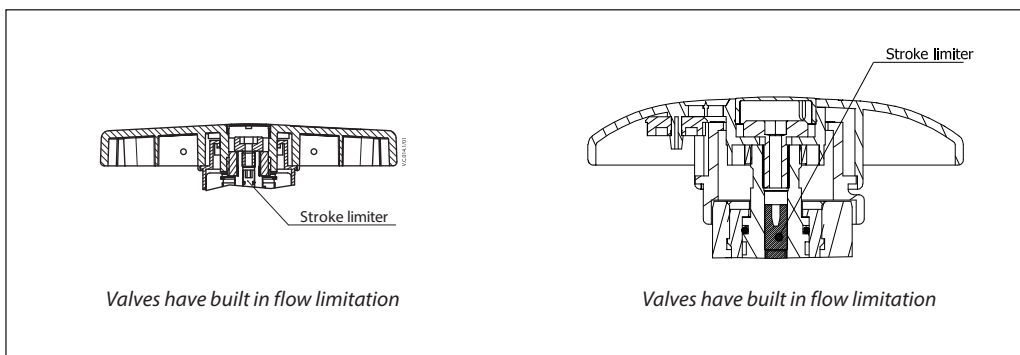
MSV-F2 valves - PN 25

|                       |   |     |     |     |      |      |      |      |       |                 |                        |                        |     |      |      |      |      |
|-----------------------|---|-----|-----|-----|------|------|------|------|-------|-----------------|------------------------|------------------------|-----|------|------|------|------|
| Nominal diameter      | DN  | 15  | 20  | 25  | 32   | 40   | 50   | 65   | 80    | 100             | 125                    | 150                    | 200 | 250  | 300  | 350  | 400  |
| $k_{vs}$              | m <sup>3</sup> /h   | 3.1 | 6.3 | 9.0 | 15.5 | 32.3 | 53.8 | 93.4 | 122.3 | 200.0           | 304.4                  | 400.8                  | 872 | 1238 | 1662 | 2359 | 3516 |
| Nominal pressure      | bar   | 25  |     |     |      |      |      |      |       |                 |                        |                        |     |      |      |      |      |
| Max. pressure drop    |   | 2.0 |     |     |      |      |      |      |       |                 |                        |                        |     |      |      |      |      |
| Leakage rate          | Grade A; According to ISO5208, Table 5 (No visible leakage)   |     |     |     |      |      |      |      |       |                 |                        |                        |     |      |      |      |      |
| Flow medium           | Water and water mixtures with secondary coolants (like glycols <sup>1)</sup> ) for closed heating and cooling systems |     |     |     |      |      |      |      |       |                 |                        |                        |     |      |      |      |      |
| Max. flow temperature | °C  | 150 |     |     |      |      |      |      |       |                 |                        |                        |     |      |      |      |      |
| Connections           | Flanges according to EN 1092-2  |     |     |     |      |      |      |      |       |                 |                        |                        |     |      |      |      |      |
| Weight                | kg  | 2.3 | 3.0 | 3.8 | 5.8  | 7.2  | 9.4  | 17   | 21    | 33              | 44                     | 56.5                   | 107 | 172  | 278  | 420  | 603  |
| <b>Material</b>       |   |     |     |     |      |      |      |      |       |                 |                        |                        |     |      |      |      |      |
| Body                  | Ductile iron EN-GJS 400-15 (GGG-40)   |     |     |     |      |      |      |      |       |                 |                        |                        |     |      |      |      |      |
| Seat sealing          | EPDM  |     |     |     |      |      |      |      |       |                 |                        |                        |     |      |      |      |      |
| Cone                  | CW602N  |     |     |     |      |      |      |      |       | Stainless steel | Stainless steel CW602N | Casted stainless steel |     |      |      |      |      |

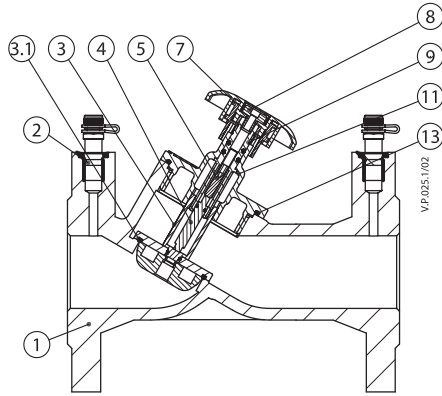
<sup>1)</sup> Please verify compability between materials and secondary coolants with supplier.

Pressure-temperature classification (flanges according to EN 1092-2)

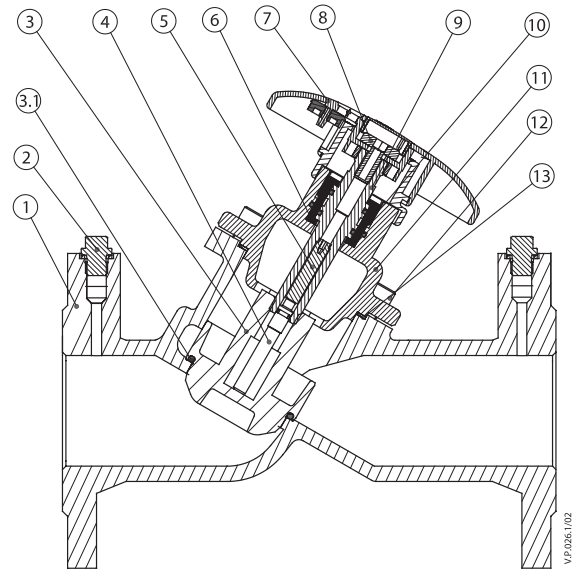
| Material                          | PN |     | Temperature |        |        |        |
|-----------------------------------|----|-----|-------------|--------|--------|--------|
|                                   |    |     | -10 °C      | 120 °C | 130 °C | 150 °C |
| EN-GJL 250 (MSV-F2 DN 15-150)     | 16 | bar | 16          | 16     | 15.5   | -      |
| EN-GJL 250 (MSV-F2 DN 200-400)    | 16 |     | 16          | 16     | 15.5   | -      |
| EN-GJS 400-15 (MSV-F2 DN 15-150)  | 25 |     | 25          | 25     | -      | 24.3   |
| EN-GJS 400-15 (MSV-F2 DN 200-400) | 25 |     | 25          | 25     | -      | 24.3   |



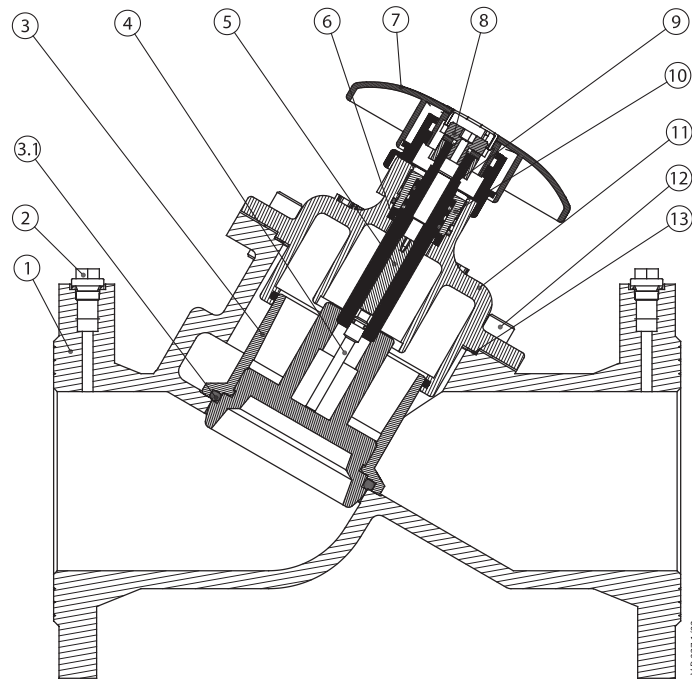
Design



MSV-F2 DN 15-50



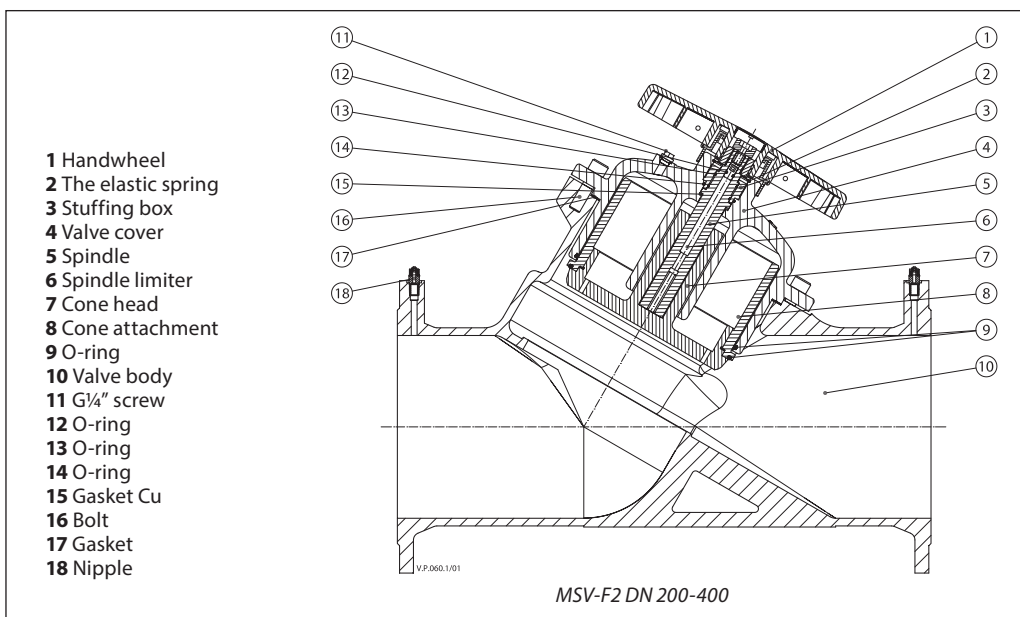
MSV-F2 DN 65-80



MSV-F2 DN 100-150

- |   |                              |
|---|------------------------------|
| 1 Body  | 8 Fixed screw                |
| 2 Plug  | 9 Spindle                    |
| 3 Valve cone  | 10 Stuffing box              |
| 3.1 Seat soft sealing                                   | 11 Bonnet                    |
| 4 Rod   | 12 Allen screw/Hexagon screw |
| 5 Stroke limiter/Allen screw                            | 13 Flat gasket               |
| 6 Gasket  |                              |
| 7 Handwheel with digital display<br>- DN 15-150 plastic |                              |

Design (continued)



- 1 Handwheel
- 2 The elastic spring
- 3 Stuffing box
- 4 Valve cover
- 5 Spindle
- 6 Spindle limiter
- 7 Cone head
- 8 Cone attachment
- 9 O-ring
- 10 Valve body
- 11 G 1/4" screw
- 12 O-ring
- 13 O-ring
- 14 O-ring
- 15 Gasket Cu
- 16 Bolt
- 17 Gasket
- 18 Nipple

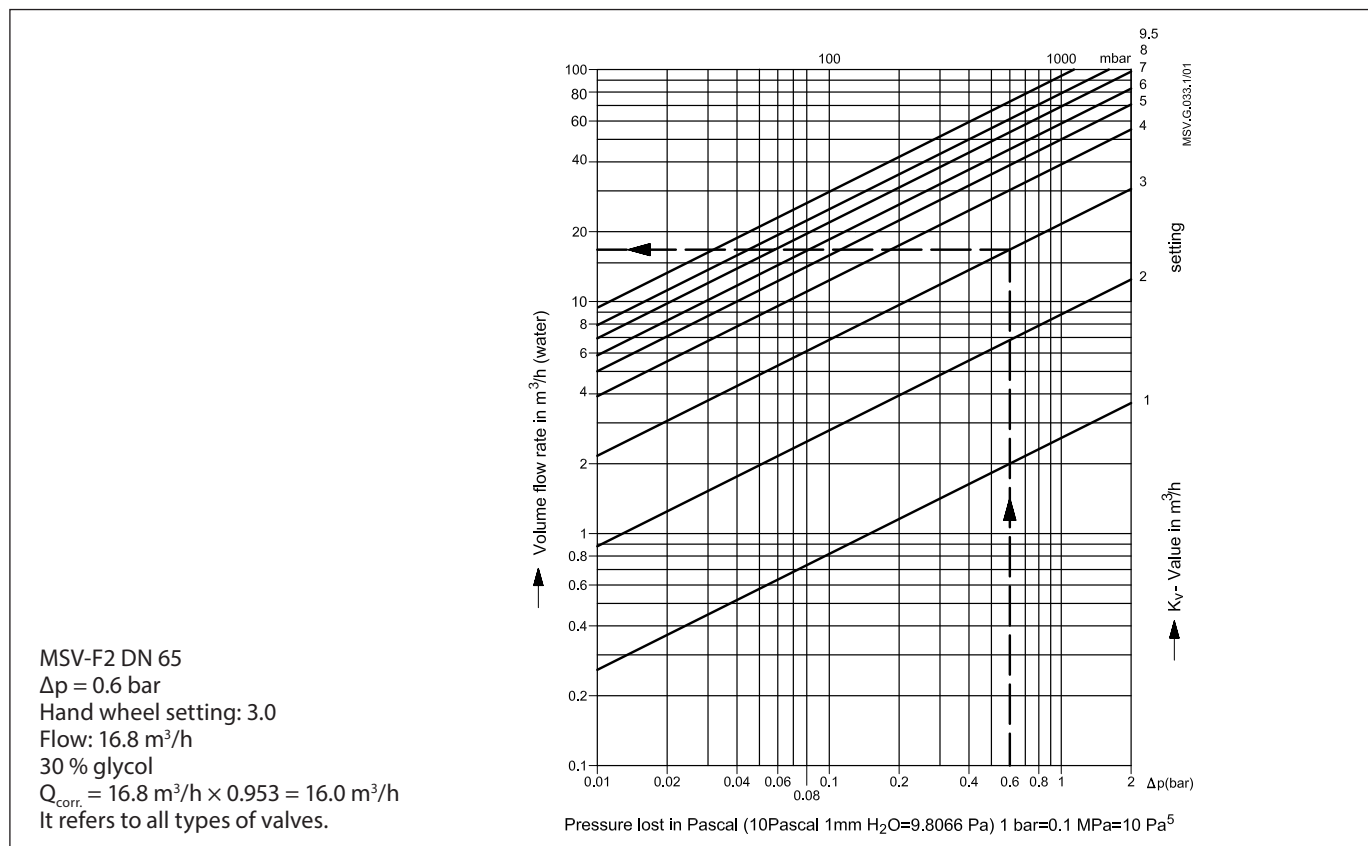
Setting

Ethylenglycol correction factor

Formula:  $C_2H_6O_2$   
 Density at 20 °C:  $\rho_{water} = 1 \text{ kg/dm}^3$   
 $\rho_{glycol} = 1.338 \text{ kg/dm}^3$

$$Q_{corr.} = \frac{Q_{water}}{\sqrt{\text{Share of water} \times \rho_{water} + \text{Share of glycol} \times \rho_{glycol}}}$$

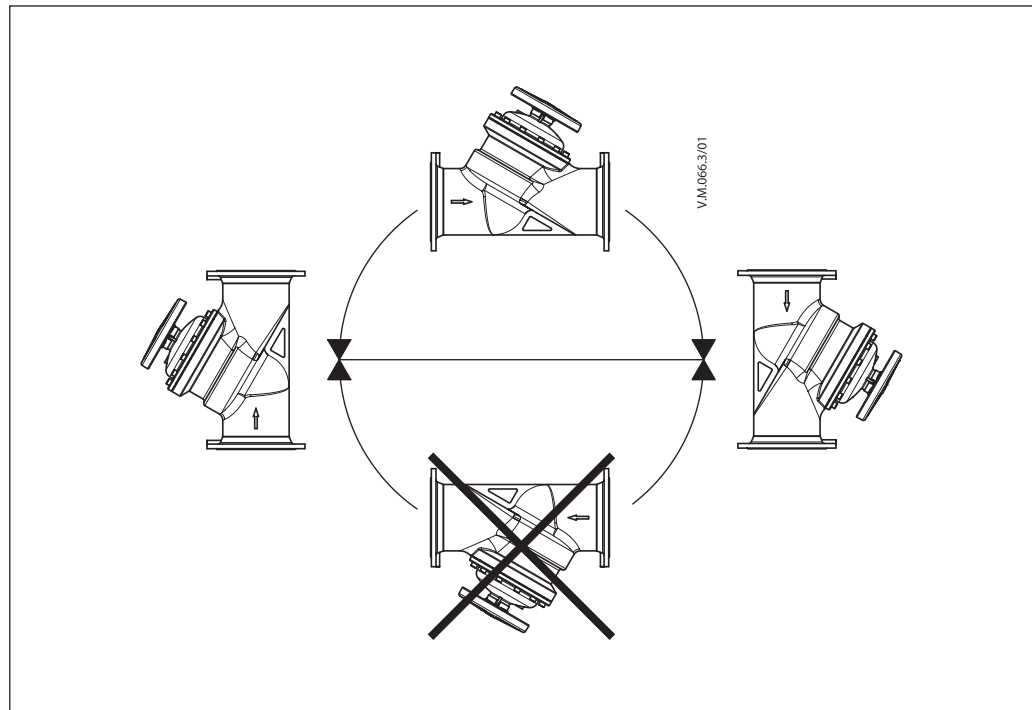
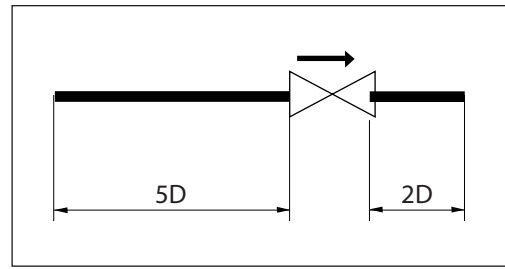
| Ethylenglycol part xg (%) | 0   | 10    | 20    | 30    | 40    | 50    | 60    | 70    | 80    | 90    | 100   |
|---------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Correction factor         | 1.0 | 0.983 | 0.968 | 0.953 | 0.939 | 0.925 | 0.912 | 0.899 | 0.887 | 0.876 | 0.864 |



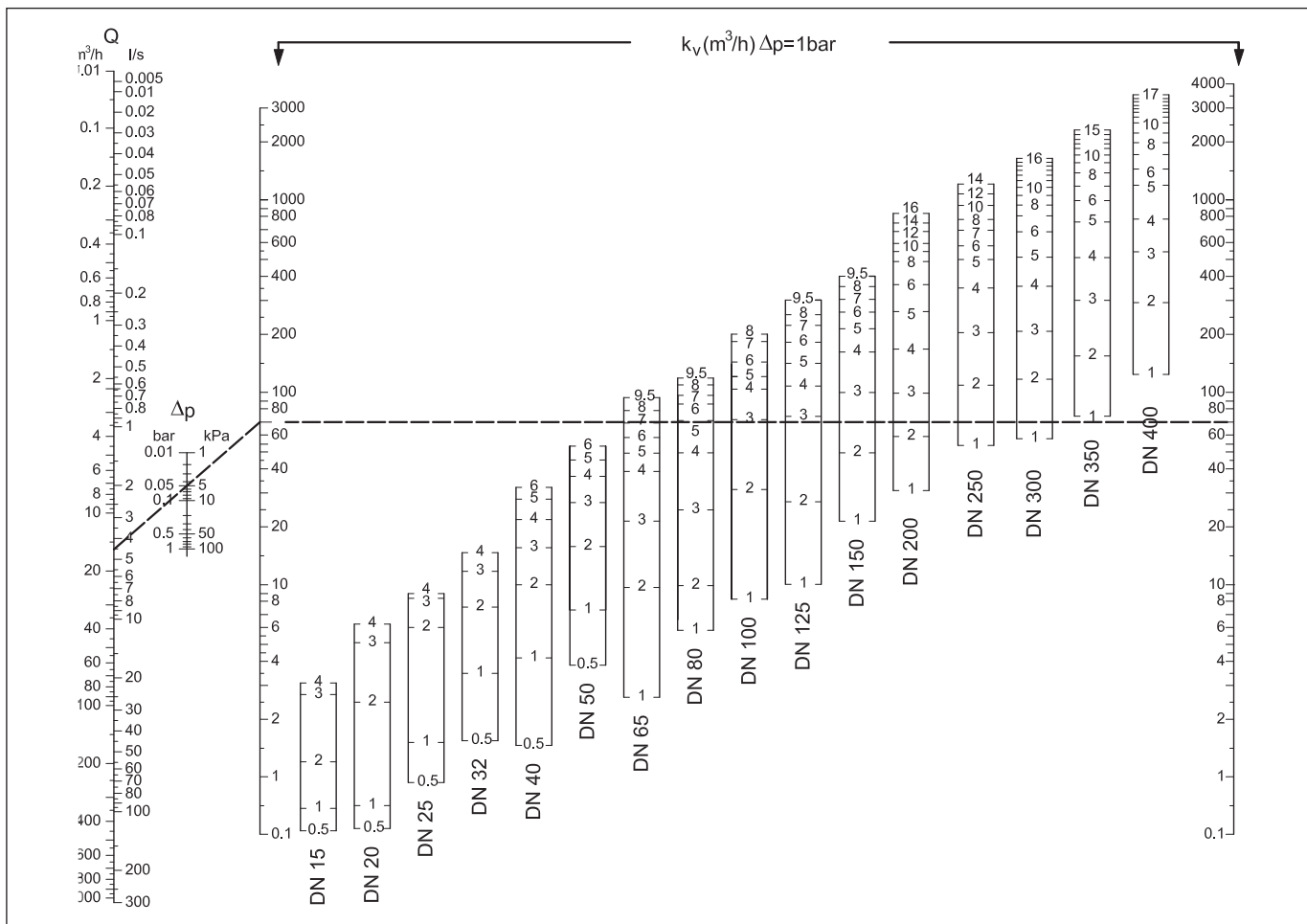
Installation

Always install the valve with the arrow on the body in the same direction as the flow. In order to avoid turbulence, which will affect the measuring accuracy, it is recommended to have a straight length of pipe up and down stream from the valve as shown (D - diameter of pipe).

The influence of turbulence, if our recommendations are not adhered to, can influence the flow up to 20%.



Sizing



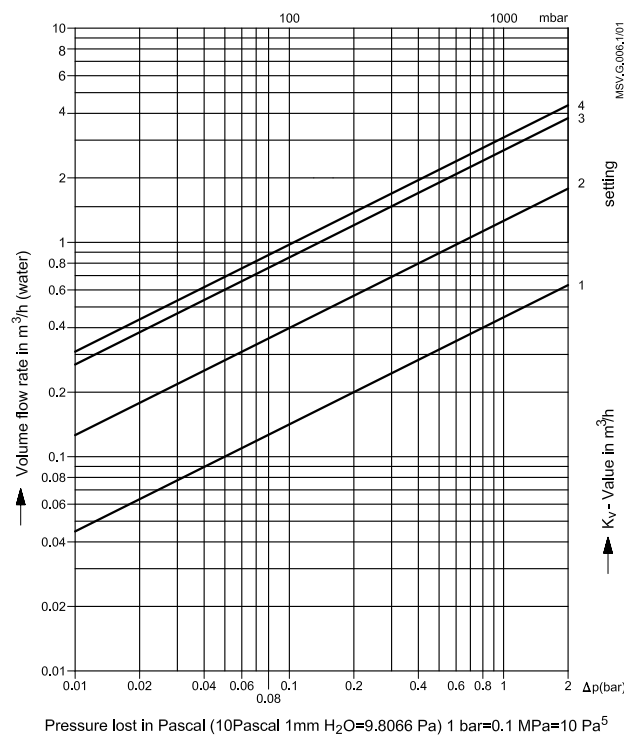
*Example:*  
 MSV-F2 DN 65  
 Q = 16 m³/h  
 Δp = 5 kPa

Calculation for the valve setting:  
 Draw a straight line from the desired flow  
 (16 m³/h) through the differential pressure  
 (5 kPa) to k<sub>v</sub> scale.

From the k<sub>v</sub> value draw a horizontal line. Where  
 it intersects the given valve (DN65) you can find  
 the valve setting.

*Result:*  
 presetting 7.0

Flow diagrams



DN 15 / PN 16 / PN 25

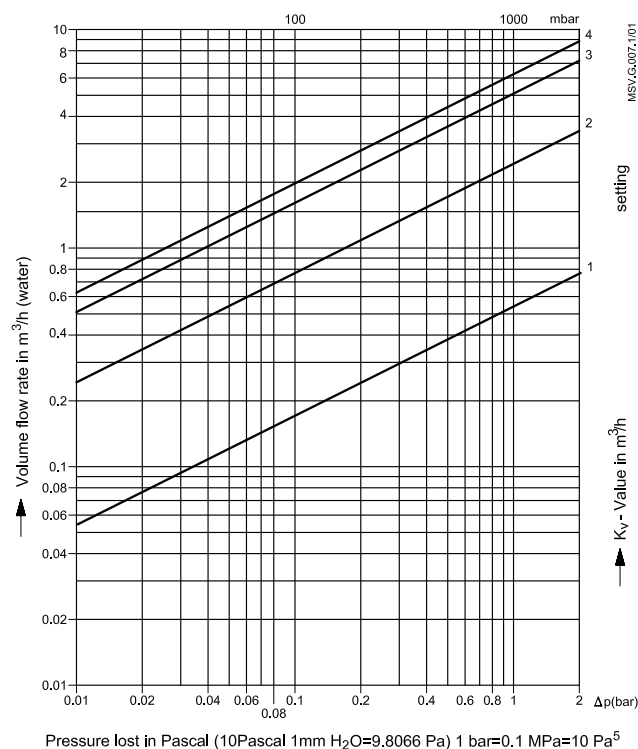
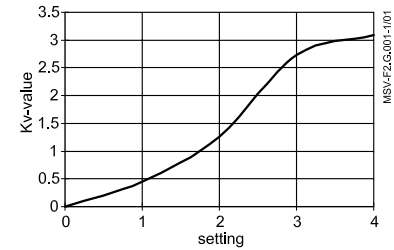
| Setting | k <sub>v</sub> -value |
|---------|-----------------------|
| 1       | 0.45                  |
| 2       | 1.26                  |
| 3       | 2.73                  |
| 4       | 3.09                  |

Max. permissible differential pressure in throttling function 1.5/2.0 bar.

Max. permissible flow speed: ≤ 4 m/s

- Condition:
- The flow must be free of cavitation.

Flow characteristic



DN 20 / PN 16 / PN 25

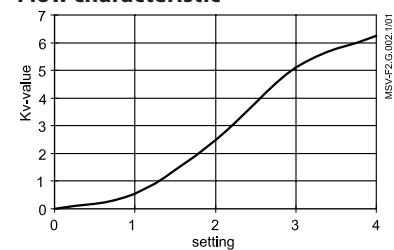
| Setting | k <sub>v</sub> -value |
|---------|-----------------------|
| 1       | 0.54                  |
| 2       | 2.48                  |
| 3       | 5.11                  |
| 4       | 6.26                  |

Max. permissible differential pressure in throttling function 1.5/2.0 bar.

Max. permissible flow speed: ≤ 4 m/s

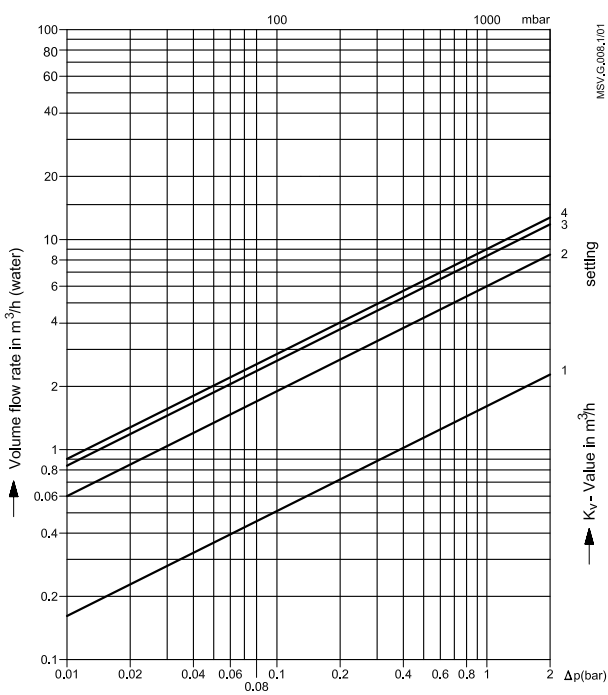
- Condition:
- The flow must be free of cavitation.

Flow characteristic





Flow diagrams (continued)



Pressure lost in Pascal (10Pascal 1mm H<sub>2</sub>O=9.8066 Pa) 1 bar=0.1 MPa=10 Pa<sup>5</sup>

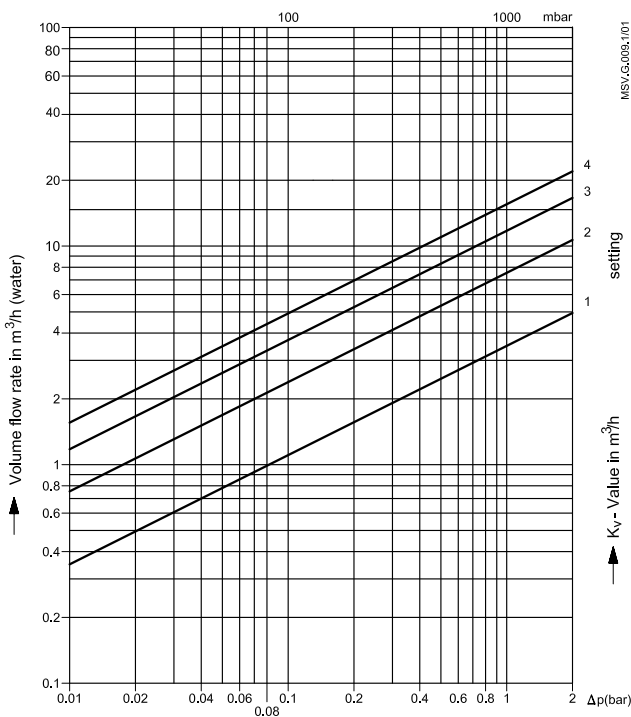
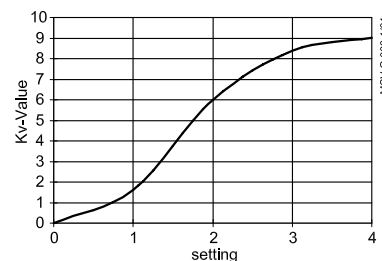
DN 25 / PN 16 / PN 25

| Setting | $k_v$ -value |
|---------|--------------|
| 1       | 1.61         |
| 2       | 6.0          |
| 3       | 8.38         |
| 4       | 9.01         |

Max. permissible differential pressure in throttling function 1.5/2.0 bar.  
 Max. permissible flow speed:  $\leq 4$  m/s  
 Condition:

- The flow must be free of cavitation.

Flow characteristic



Pressure lost in Pascal (10Pascal 1mm H<sub>2</sub>O=9.8066 Pa) 1 bar=0.1 MPa=10 Pa<sup>5</sup>

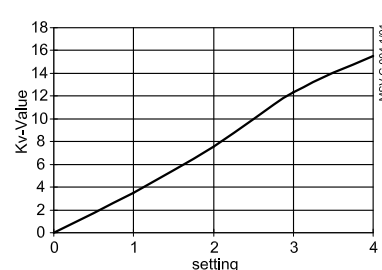
DN 32 / PN 16 / PN 25

| Setting | $k_v$ -value |
|---------|--------------|
| 1       | 3.53         |
| 2       | 7.56         |
| 3       | 12.32        |
| 4       | 15.54        |

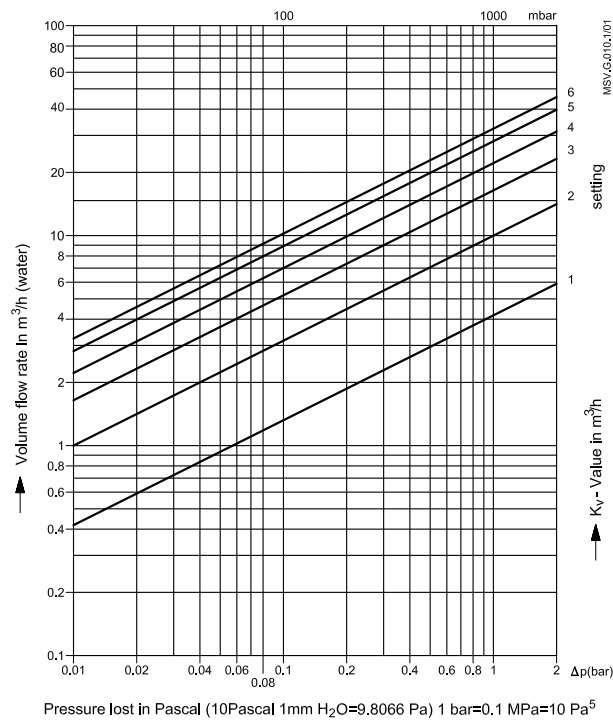
Max. permissible differential pressure in throttling function 1.5/2.0 bar.  
 Max. permissible flow speed:  $\leq 4$  m/s  
 Condition:

- The flow must be free of cavitation.

Flow characteristic



Flow diagrams (continued)

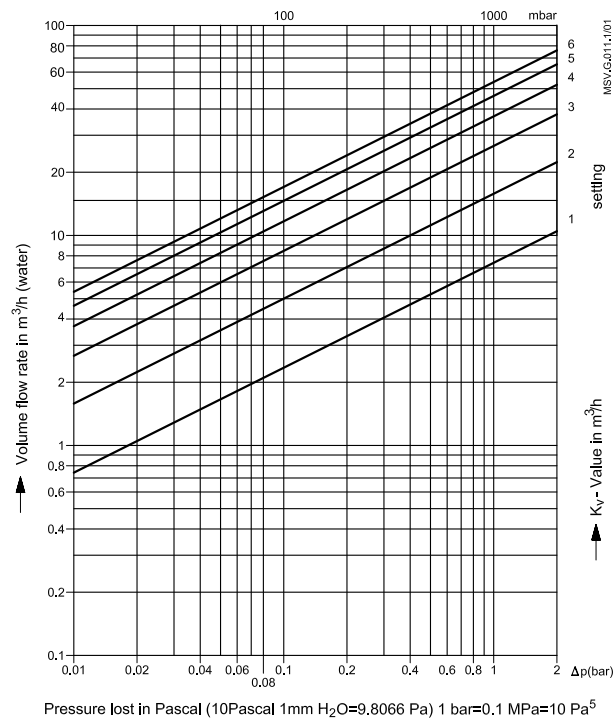
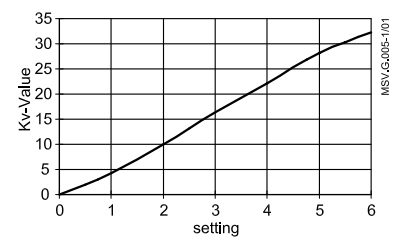


DN 40 / PN 16 / PN 25

| Setting | k <sub>v</sub> -value |
|---------|-----------------------|
| 1       | 4.19                  |
| 2       | 9.98                  |
| 3       | 16.42                 |
| 4       | 22.13                 |
| 5       | 28.14                 |
| 6       | 32.31                 |

Max. permissible differential pressure in throttling function 1.5/2.0 bar.  
 Max. permissible flow speed: ≤ 4 m/s  
 Condition:  
 • The flow must be free of cavitation.

Flow characteristic

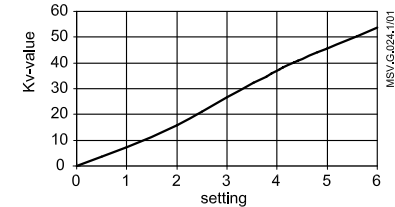


DN 50 / PN 16 / PN 25

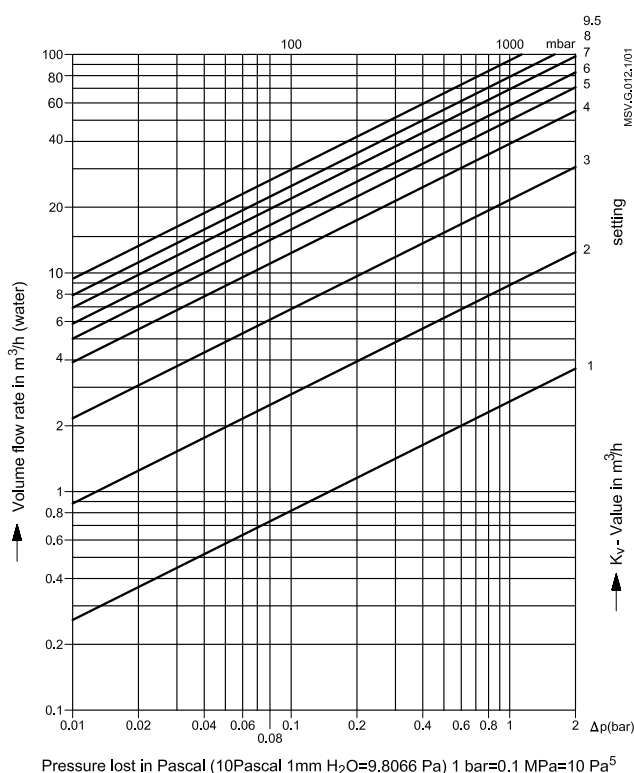
| Setting | k <sub>v</sub> -value |
|---------|-----------------------|
| 1       | 7.4                   |
| 2       | 15.8                  |
| 3       | 26.7                  |
| 4       | 36.9                  |
| 5       | 46.2                  |
| 6       | 53.8                  |

Max. permissible differential pressure in throttling function 1.5/2.0 bar.  
 Max. permissible flow speed: ≤ 4 m/s  
 Condition:  
 • The flow must be free of cavitation.

Flow characteristic



Flow diagrams (continued)



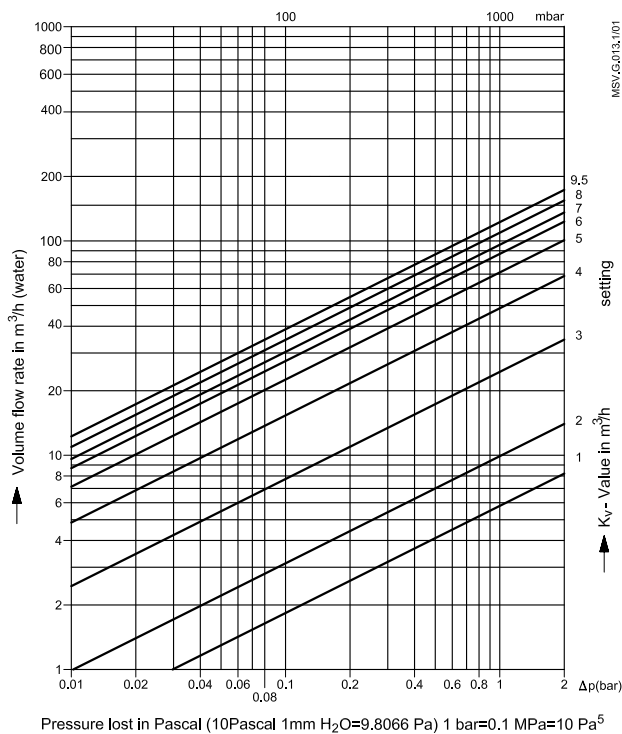
DN 65 / PN 16 / PN 25

| Setting | k <sub>v</sub> -value |
|---------|-----------------------|
| 1       | 2.6                   |
| 2       | 8.8                   |
| 3       | 21.6                  |
| 4       | 39.0                  |
| 5       | 49.8                  |
| 6       | 58.5                  |
| 7       | 69.3                  |
| 8       | 79.0                  |
| 9       | 87.8                  |
| 9.5     | 93.4                  |

Max. permissible differential pressure in throttling function 1.5/2.0 bar.  
 Max. permissible flow speed: ≤ 4 m/s  
 Condition:

- The flow must be free of cavitation.

Flow characteristic



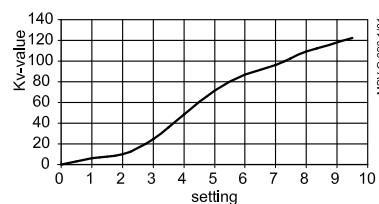
DN 80 / PN 16 / PN 25

| Setting | k <sub>v</sub> -value |
|---------|-----------------------|
| 1       | 5.8                   |
| 2       | 9.9                   |
| 3       | 24.5                  |
| 4       | 48.5                  |
| 5       | 71.3                  |
| 6       | 87.0                  |
| 7       | 96.4                  |
| 8       | 109.3                 |
| 9.5     | 122.3                 |

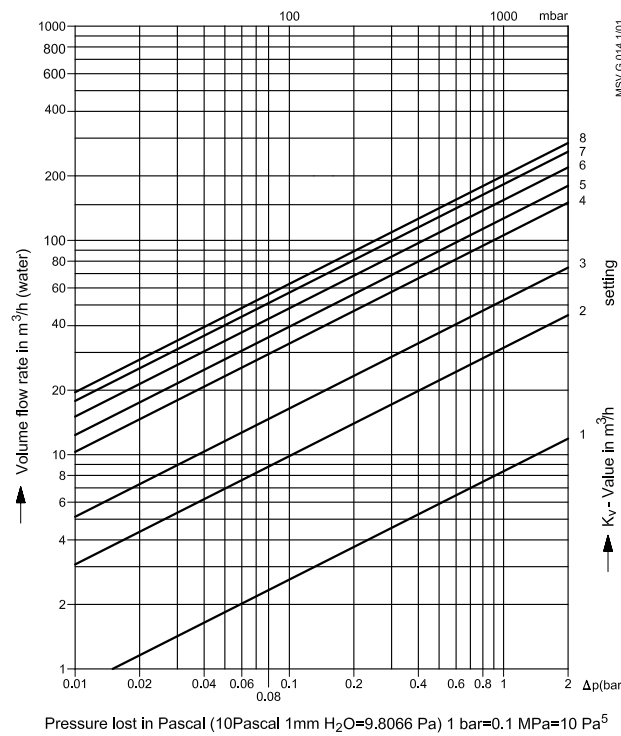
Max. permissible differential pressure in throttling function 1.5/2.0 bar.  
 Max. permissible flow speed: ≤ 4 m/s  
 Condition:

- The flow must be free of cavitation.

Flow characteristic



Flow diagrams (continued)



DN 100 / PN 16 / PN 25

| Setting | k <sub>v</sub> -value |
|---------|-----------------------|
| 1       | 8.3                   |
| 2       | 32.4                  |
| 3       | 72.9                  |
| 4       | 107.2                 |
| 5       | 128.2                 |
| 6       | 152.8                 |
| 7       | 180.0                 |
| 8       | 200.0                 |

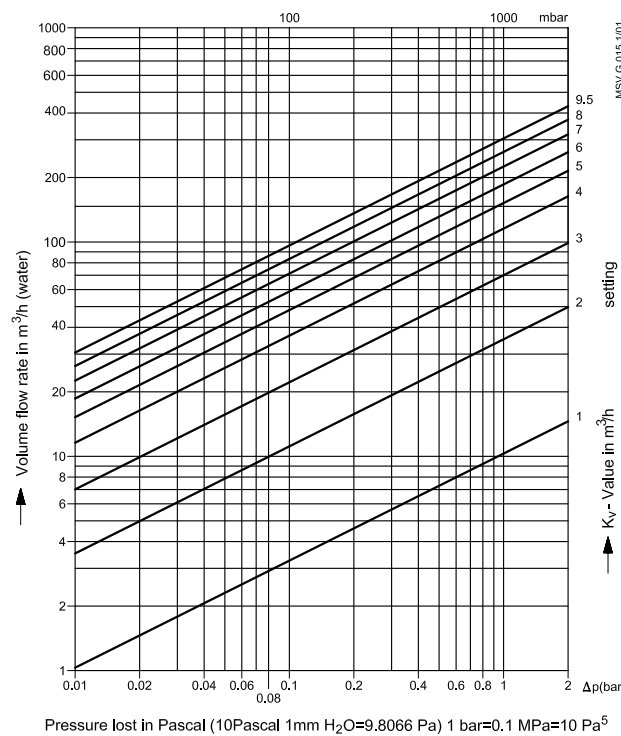
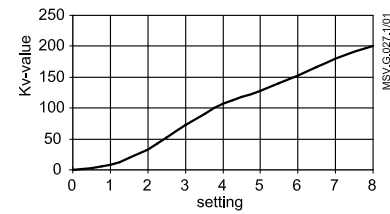
Max. permissible differential pressure in throttling function 1.5/2.0 bar.

Max. permissible flow speed: ≤ 4 m/s

Condition:

- The flow must be free of cavitation.

Flow characteristic



DN 125 / PN 16 / PN 25

| Setting | k <sub>v</sub> -value |
|---------|-----------------------|
| 1       | 10.3                  |
| 2       | 35.4                  |
| 3       | 73.0                  |
| 4       | 114.9                 |
| 5       | 150.5                 |
| 6       | 185.2                 |
| 7       | 225.1                 |
| 8       | 261.1                 |
| 9       | 294.2                 |
| 9.5     | 304.4                 |

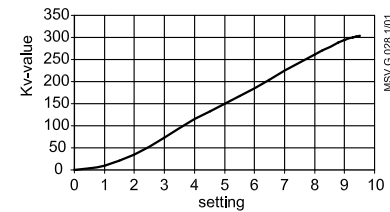
Max. permissible differential pressure in throttling function 1.5/2.0 bar.

Max. permissible flow speed: ≤ 4 m/s

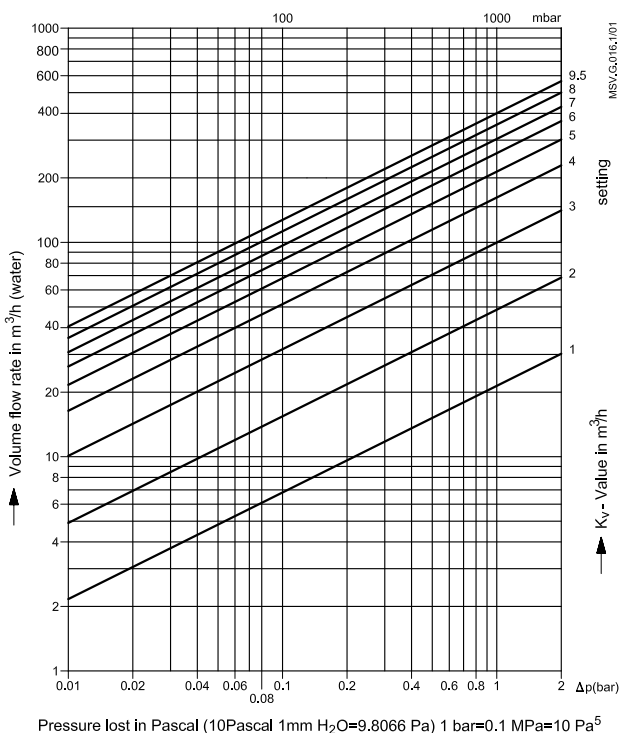
Condition:

- The flow must be free of cavitation.

Flow characteristic



Flow diagrams (continued)

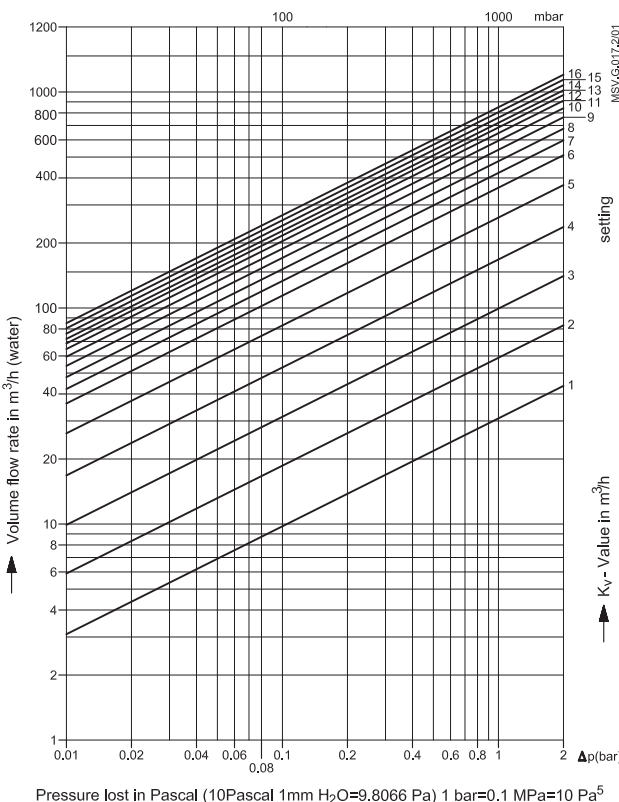
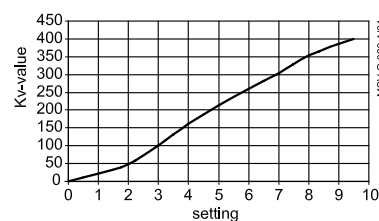


DN 150 / PN 16 / PN 25

| Setting | k <sub>v</sub> -value |
|---------|-----------------------|
| 1       | 21.4                  |
| 2       | 48.5                  |
| 3       | 99.8                  |
| 4       | 162.0                 |
| 5       | 214.0                 |
| 6       | 260.9                 |
| 7       | 304.1                 |
| 8       | 354.6                 |
| 9.5     | 400.8                 |

Max. permissible differential pressure in throttling function 1.5/2.0 bar.  
 Max. permissible flow speed: ≤ 4 m/s  
 Condition:  
 • The flow must be free of cavitation.

Flow characteristic

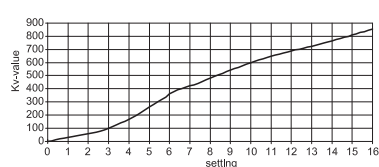


DN 200 / PN 16 / PN 25

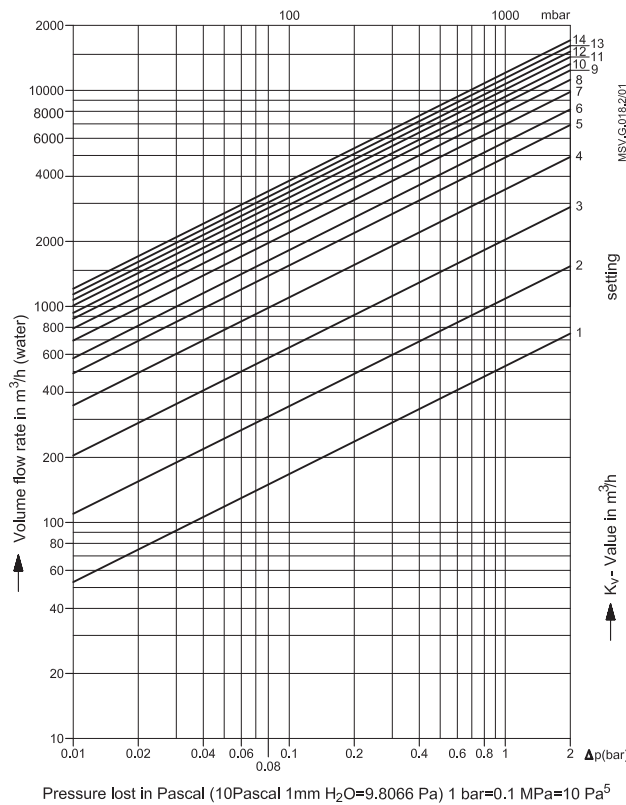
| Setting   | k <sub>v</sub> -value |
|-----------|-----------------------|
| 1         | 30.8                  |
| 2         | 58.7                  |
| 3         | 100                   |
| 4         | 170                   |
| 5         | 262                   |
| 6         | 361                   |
| 7         | 423                   |
| 8         | 481                   |
| 9         | 542                   |
| 10        | 597                   |
| 11        | 647                   |
| 12        | 684                   |
| 13        | 722                   |
| 14        | 763                   |
| 15        | 807                   |
| 16        | 850                   |
| Max: 16.7 | 872                   |

Max. permissible differential pressure in throttling function 1.5 bar.  
 Max. permissible flow speed: ≤ 4 m/s  
 Condition:  
 • The flow must be free of cavitation.

Flow characteristic



Flow diagrams (continued)

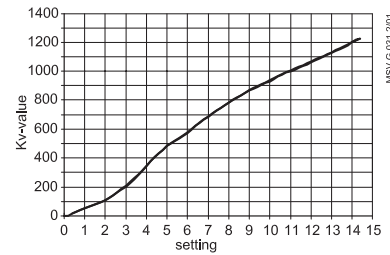


DN 250 / PN 16 / PN 25

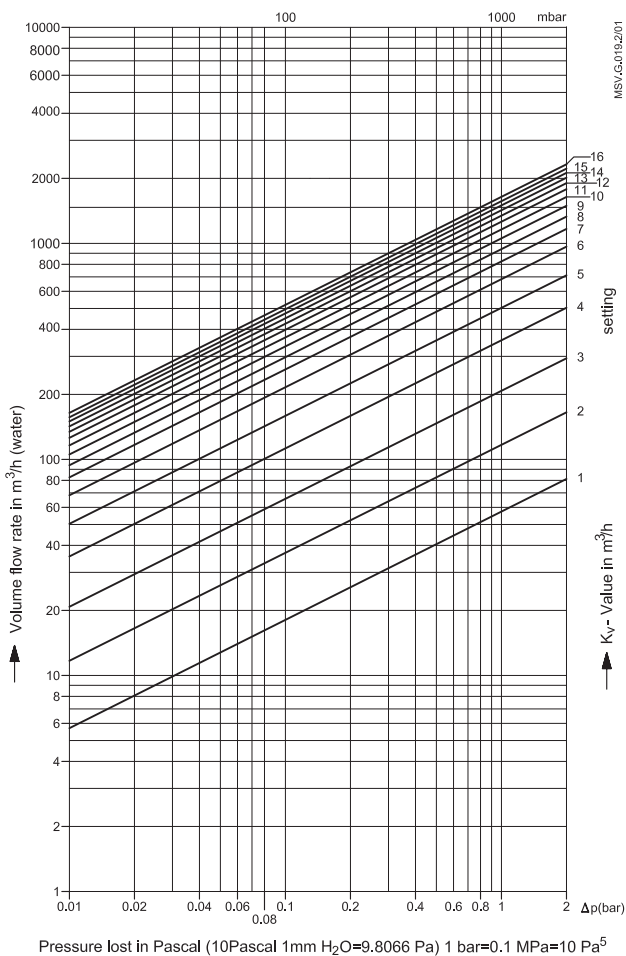
| Setting   | k <sub>v</sub> -value |
|-----------|-----------------------|
| 1         | 53.6                  |
| 2         | 109                   |
| 3         | 207                   |
| 4         | 349                   |
| 5         | 490                   |
| 6         | 580                   |
| 7         | 693                   |
| 8         | 791                   |
| 9         | 877                   |
| 10        | 942                   |
| 11        | 1012                  |
| 12        | 1076                  |
| 13        | 1140                  |
| 14        | 1211                  |
| Max: 14.4 | 1238                  |

Max. permissible differential pressure in throttling function 1.5 bar.  
 Max. permissible flow speed: ≤ 4 m/s  
 Condition:  
 • The flow must be free of cavitation.

Flow characteristic



Flow diagrams (continued)



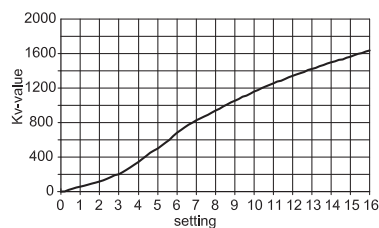
DN 300 / PN 16 / PN 25

| Setting   | k <sub>v</sub> -value |
|-----------|-----------------------|
| 1         | 57.4                  |
| 2         | 117                   |
| 3         | 208                   |
| 4         | 356                   |
| 5         | 503                   |
| 6         | 683                   |
| 7         | 826                   |
| 8         | 940                   |
| 9         | 1055                  |
| 10        | 1161                  |
| 11        | 1260                  |
| 12        | 1343                  |
| 13        | 1423                  |
| 14        | 1500                  |
| 15        | 1568                  |
| 16        | 1643                  |
| Max: 16.4 | 1662                  |

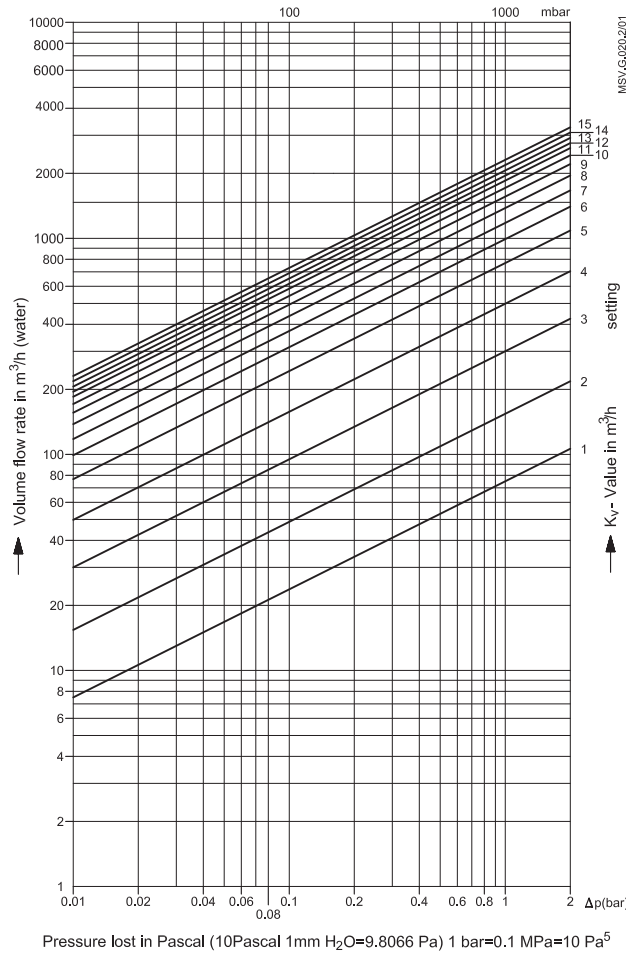
Max. permissible differential pressure in throttling function 1.5 bar.  
 Max. permissible flow speed: ≤ 4 m/s  
 Condition:

- The flow must be free of cavitation.

Flow characteristic



Flow diagrams (continued)



DN 350 / PN 16 / PN 25

| Setting | k <sub>v</sub> -value |
|---------|-----------------------|
| 1       | 75.1                  |
| 2       | 154                   |
| 3       | 300                   |
| 4       | 498                   |
| 5       | 768                   |
| 6       | 991                   |
| 7       | 1177                  |
| 8       | 1382                  |

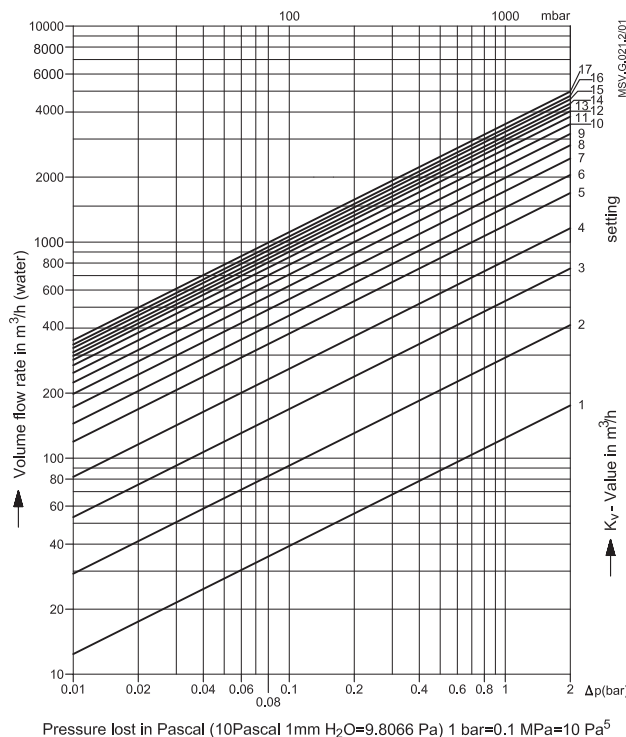
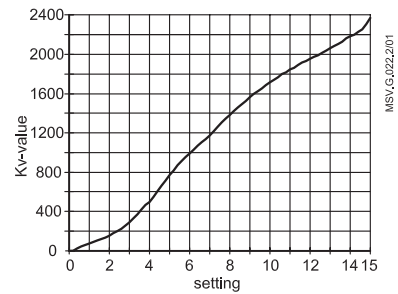
| Setting | k <sub>v</sub> -value |
|---------|-----------------------|
| 9       | 1559                  |
| 10      | 1711                  |
| 11      | 1848                  |
| 12      | 1952                  |
| 13      | 2059                  |
| 14      | 2182                  |
| 15      | 2305                  |
| 15.4    | 2359                  |

Max. permissible differential pressure in throttling function 1.5 bar.

Max. permissible flow speed: ≤ 4 m/s

- Condition:
- The flow must be free of cavitation.

Flow characteristic



DN 400 / PN 16 / PN 25

| Setting | k <sub>v</sub> -value |
|---------|-----------------------|
| 0       | 0                     |
| 1       | 124                   |
| 2       | 292                   |
| 3       | 533                   |
| 4       | 819                   |
| 5       | 1192                  |
| 6       | 1445                  |
| 7       | 1720                  |
| 8       | 1983                  |

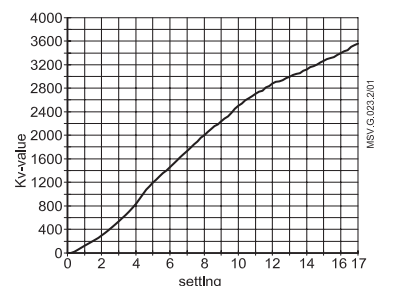
| Setting | k <sub>v</sub> -value |
|---------|-----------------------|
| 9       | 2223                  |
| 10      | 2482                  |
| 11      | 2682                  |
| 12      | 2848                  |
| 13      | 2973                  |
| 14      | 3093                  |
| 15      | 3241                  |
| 16      | 3359                  |
| Max: 17 | 3516                  |

Max. permissible differential pressure in throttling function 1.5 bar.

Max. permissible flow speed: ≤ 4 m/s

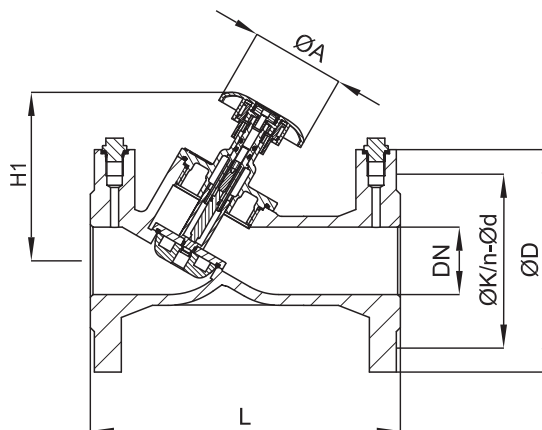
- Condition:
- The flow must be free of cavitation.

Flow characteristic





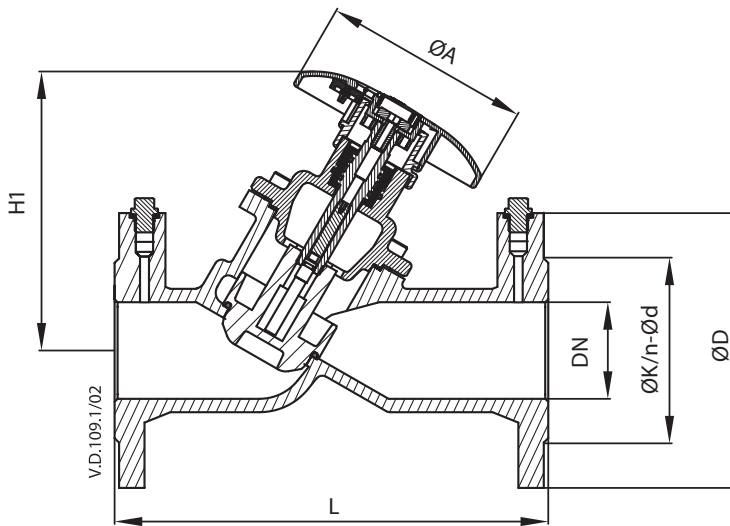
Dimensions



MSV-F2 DN 15-50

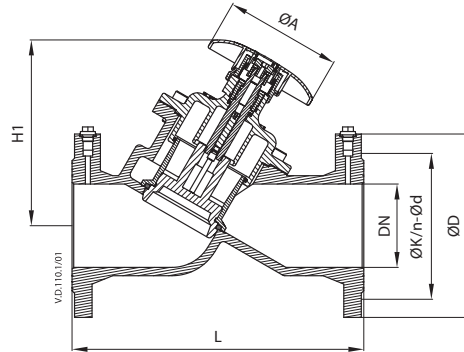
| DN | L   | ØA  | H1  | PN 16 |     |        |        | PN 25 |     |        |        |
|----|-----|-----|-----|-------|-----|--------|--------|-------|-----|--------|--------|
|    |     |     |     | ØD    | ØK  | n × Ød | Weight | ØD    | ØK  | n × Ød | Weight |
|    |     |     |     | mm    |     |        | kg     | mm    |     |        | kg     |
| 15 | 130 | 78  | 80  | 95    | 65  | 4x14   | 2.3    | 95    | 65  | 4x14   | 2.3    |
| 20 | 150 | 78  | 90  | 105   | 75  | 4x14   | 2.9    | 105   | 75  | 4x14   | 3.0    |
| 25 | 160 | 78  | 105 | 115   | 85  | 4x14   | 3.8    | 115   | 85  | 4x14   | 3.8    |
| 32 | 180 | 78  | 110 | 140   | 100 | 4x19   | 5.6    | 140   | 100 | 4x19   | 5.8    |
| 40 | 200 | 78  | 125 | 150   | 110 | 4x19   | 7.2    | 150   | 110 | 4x19   | 7.2    |
| 50 | 230 | 78  | 125 | 165   | 125 | 4x19   | 9.4    | 165   | 125 | 4x19   | 9.4    |
| 65 | 290 | 140 | 187 | 185   | 145 | 4x19   | 17     | 185   | 145 | 8x19   | 17     |
| 80 | 310 | 140 | 205 | 200   | 160 | 8x19   | 21     | 200   | 160 | 8x19   | 21     |

Remark: "n" is number of holes in the flange.



MSV-F2 DN 65-80

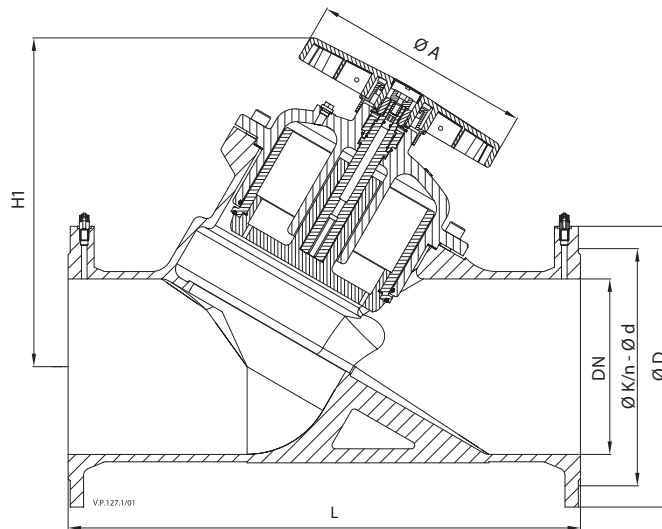
Dimensions (continued)



MSV-F2 DN 100-150

| DN  | L    | ØA  | H1  | PN 16 |     |        |        | PN 25 |     |        |        |
|-----|------|-----|-----|-------|-----|--------|--------|-------|-----|--------|--------|
|     |      |     |     | ØD    | ØK  | n × Ød | Weight | ØD    | ØK  | n × Ød | Weight |
|     |      |     |     | mm    |     |        | kg     | mm    |     |        | kg     |
| 100 | 350  | 140 | 222 | 220   | 180 | 8x19   | 32     | 235   | 190 | 8x23   | 33     |
| 125 | 400  | 140 | 251 | 250   | 210 | 8x19   | 44     | 270   | 220 | 8x28   | 44     |
| 150 | 480  | 140 | 247 | 285   | 240 | 8x23   | 56     | 300   | 250 | 8x28   | 56     |
| 200 | 600  | 306 | 418 | 340   | 295 | 12x23  | 98     | 360   | 310 | 12x28  | 107    |
| 250 | 730  | 306 | 471 | 400   | 355 | 12x28  | 153    | 425   | 370 | 12x31  | 172    |
| 300 | 850  | 306 | 525 | 460   | 410 | 12x28  | 247    | 485   | 430 | 16x31  | 278    |
| 350 | 980  | 306 | 590 | 520   | 470 | 16x28  | 374    | 555   | 490 | 16x34  | 420    |
| 400 | 1100 | 306 | 684 | 580   | 525 | 16x31  | 525    | 620   | 550 | 16x37  | 603    |

Remark: "n" is number of holes in the flange.



MSV-F2 DN 200-400

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