

Designation:

new "Hydrocontrol VTR" **old** "Hydrocontrol R"

Function:

Oventrop double regulating and commissioning valves are installed in the pipework of hot water central heating and cooling systems and serve to achieve a hydronic balance between the various circuits of the system.

The balance is achieved by a presetting with memory position.

The required values of presetting can be obtained from the flow charts. All intermediate values are infinitely adjustable.

The selected presetting can be read off two scales (basic scale and fine adjustment scale, see illustration presetting). The Oventrop double regulating and commissioning valves have 2 threaded ports for fill and drain ball valves or pressure test points for the measurement of differential pressure.

The double regulating and commissioning valves may be installed in either the supply or the return pipe.

When installing the valve it must be ensured that the direction of flow conforms to the direction of the arrow on the valve body and that the valve is installed with a minimum of $L = 3 \times \varnothing$ of straight pipe at the valve inlet and of $L = 2 \times \varnothing$ of straight pipe at the valve outlet.

The flow charts are valid for both, installation in the supply or the return pipe, provided the direction of flow conforms to the arrow embossed on the valve body.

In cooling systems using mixtures of water and glycol, the correction factors related to the indicated chart values have to be taken into consideration.

Advantages:

- the location of the functioning components on one level allows a simple assembly and easy operation
- only one valve for 5 functions:
 - presetting
 - measuring
 - isolating
 - filling
 - draining
- the supply and the return pipe can be marked by use of the colour rings supplied with each valve
- low pressure loss (oblique pattern)
- infinitely adjustable presetting, exact measurement of pressure loss and flow via the pressure test points
- threads according to EN 10226 (BS 21), suitable for Oventrop compression fittings (102 71 51-58) for copper pipes up to a max. diameter of 22 mm and Oventrop composition pipe "Copipe"
- fill and drain ball valve with internal stop and pressure test point with O-ring seal between valve body and test point (no additional seals required)
- patented measuring channel led around the stem assembly to the test points ensures the best possible accuracy between the differential pressure measured at the pressure test points and the actual differential pressure of the valve (see chart indicating flow rate tolerances)



Bronze double regulating and commissioning valve PN 16/PN 25 "Hydrocontrol VTR"



both ports male thread
for weldable steel tailpipes
DN 10 up to DN 50

or:
... for solder tailpipes 15 mm \varnothing up to 54 mm \varnothing

or:
... for threaded tailpipes DN 10 up to DN 50

or:
...for female threaded tailpipes DN 15 up to DN 32



both ports female thread according to EN 10226 (BS 21)
DN 10 to DN 65

Double regulating and commissioning valve "Hydrocontrol VTR" both ports with female thread according to EN 10226 (BS 21)

Measuring technic "classic"

Tender specification:

Double regulating and commissioning valve PN 25 (water pH value 6.5-10) (DN 65: PN 16), both ports with female thread according to EN 10226 (BS 21), not suitable for steam. Colour rings for marking of supply and return pipe (except for DN 65), oblique pattern with secured, infinitely adjustable fine presetting controllable at any time; optical display of the presetting depending on the position of the handwheel, valve body and bonnet made of bronze (Rg 5), disc and stem made of brass resistant to de-zincification (DZR), disc with PTFE seal, maintenance-free stem seal due to double O-ring, all functioning components on one level, pressure test point and fill and drain ball valve interchangeable, installation in the supply or the return pipe. DN 15 up to DN 32 DVGW tested and registered, DN 10 up to DN 50 WRAS tested and registered.

DN 10 to DN 50 with type approval certificate for shipbuilding.

(Pressure loss charts, k_v and Zeta values, see following pages)

Max. operating temperature t_s : +150 °C
(press connection: 120 °C)

Min. operating temperature t_s : -20 °C

Max. operating pressure p_s : 25 bar (PN 25) (female thread,
DN 10-DN 50)

Max. operating pressure p_s : 16 bar (PN 16)
(press connection, DN 65)

Double regulating and commissioning valves both ports with female thread according to EN 10226 (BS 21) with threaded ports for accessories sets (closed with blind plugs)

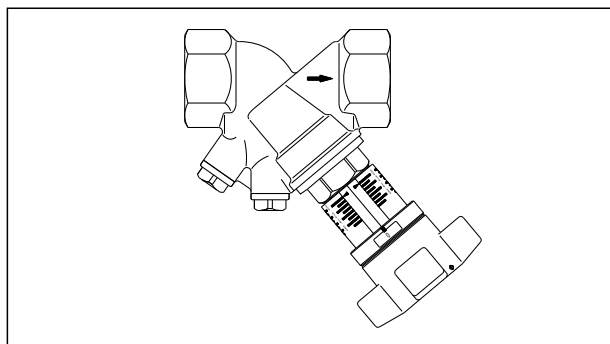
| | | Item no. |
|-------|--------|-----------|
| DN 10 | 3/8" | 106 01 03 |
| DN 15 | 1/2" | 106 01 04 |
| DN 20 | 3/4" | 106 01 06 |
| DN 25 | 1" | 106 01 08 |
| DN 32 | 1 1/4" | 106 01 10 |
| DN 40 | 1 1/2" | 106 01 12 |
| DN 50 | 2" | 106 01 16 |
| DN 65 | 2 1/2" | 106 01 20 |

both ports female thread according to EN 10226 (BS 21) with mounted accessories set no. 2 = 2 pressure test points G 1/4"

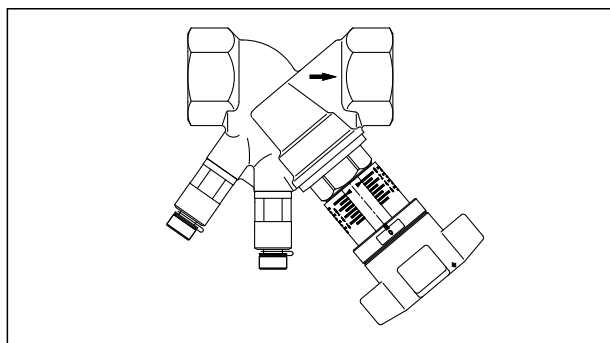
| | | Item no. |
|-------|--------|-----------|
| DN 10 | 3/8" | 106 02 03 |
| DN 15 | 1/2" | 106 02 04 |
| DN 20 | 3/4" | 106 02 06 |
| DN 25 | 1" | 106 02 08 |
| DN 32 | 1 1/4" | 106 02 10 |
| DN 40 | 1 1/2" | 106 02 12 |
| DN 50 | 2" | 106 02 16 |

both ports female thread according to EN 10226 (BS 21) with mounted accessories set no. 3 = 1 pressure test point G 1/4" and 1 fill and drain ball valve G 1/4"

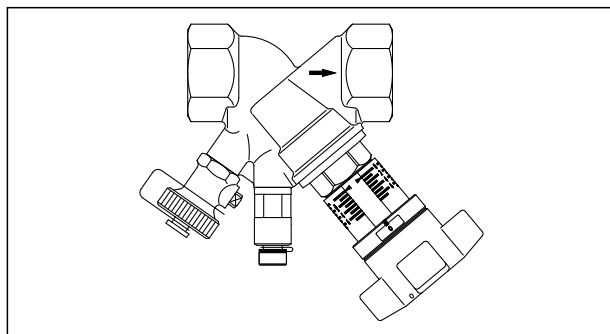
| | | Item no. |
|-------|--------|-----------|
| DN 10 | 3/8" | 106 03 03 |
| DN 15 | 1/2" | 106 03 04 |
| DN 20 | 3/4" | 106 03 06 |
| DN 25 | 1" | 106 03 08 |
| DN 32 | 1 1/4" | 106 03 10 |
| DN 40 | 1 1/2" | 106 03 12 |
| DN 50 | 2" | 106 03 16 |



both ports female thread according to EN 10226 (BS 21), item no. 106 01..

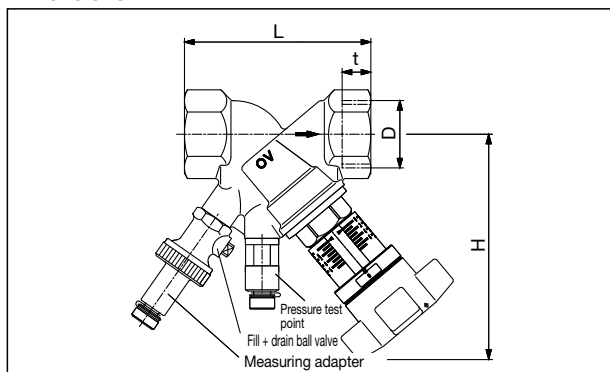


both ports female thread according to EN 10226 (BS 21), item no. 106 02..



both ports female thread according to EN 10226 (BS 21), item no. 106 03..

Dimensions:



| DN | D EN 10226 | t | L | H |
|----|---------------|------|------|-----|
| 10 | Rp 3/8 | 10.1 | 73 | 114 |
| 15 | Rp 1/2 | 13.2 | 80 | 114 |
| 20 | Rp 3/4 | 14.5 | 84 | 116 |
| 25 | Rp 1 | 16.8 | 97.5 | 119 |
| 32 | Rp 1 1/4 | 19.1 | 110 | 136 |
| 40 | Rp 1 1/2 | 19.1 | 120 | 138 |
| 50 | Rp 2 | 25.7 | 150 | 148 |
| 65 | Rp 2 1/2 | 20.0 | 151 | 186 |

"Hydrocontrol VPR":

both ports press connection

| | k_{VS} value | | Item no. |
|-------|----------------|-------|-----------|
| DN 15 | 2.88 | 15 mm | 106 01 51 |
| DN 15 | 3.88 | 18 mm | 106 01 52 |
| DN 20 | 5.71 | 22 mm | 106 01 54 |
| DN 25 | 8.89 | 25 mm | 106 01 56 |
| DN 32 | 19.45 | 35 mm | 106 01 58 |
| DN 40 | 27.51 | 42 mm | 106 01 60 |
| DN 50 | 38.78 | 54 mm | 106 01 62 |

For the direct connection of copper pipes according to EN 1057/DVGW GW 392, stainless steel pipes according to EN 10088/DVGW 541 and thin-walled C-steel pipes (material no. E 195/1.0034) according to EN 10305-3. Pressing must be carried out to tighten the connection. Only use press jaws with the original contours SANHA (SA), Geberit-Mapress (MM) or Viega (Profipress). Processing must be carried out according to the installation instructions.

Accessories sets:

| | Item no. |
|--|-----------|
| 1 fill and drain ball valve | 106 01 91 |
| 2 pressure test points | 106 02 81 |
| 1 pressure test point | |
| 1 fill and drain ball valve | 106 03 81 |
| 1 extension for accessories sets (80 mm) | 106 02 95 |
| 1 extension for accessories sets (40 mm) | 168 82 95 |
| 1 measuring adapter | 106 02 98 |
| 1 stem extension (DN 10 - DN 50, 35 mm) | 168 82 96 |
| Lead sealing set (10-fold) | 108 90 91 |
| Locking set (1-fold) | 106 01 80 |

**Double regulating and commissioning valve "Hydrocontrol VTR" both ports with male thread and collar nut
Measuring technic "classic"**

Tender specification:

Double regulating and commissioning valve PN 16 (PN 20 for cold water, pH value 6.5-10), both ports with male thread and collar nut for weldable, solder and threaded tailpipes, flat sealing, between -20°C and +150°C, not suitable for steam. Colour rings for marking of supply and return pipe, oblique pattern with secured, infinitely adjustable fine presetting controllable at any time; optical display of the presetting depending on the position of the handwheel, valve body and bonnet made of bronze (Rg 5), disc and stem made of brass resistant to dezincification (DZR), disc with PTFE seal, maintenance-free stem seal due to double O-ring, all functioning components on one level, pressure test point and fill and drain ball valve interchangeable, installation in the supply or the return pipe. DN 15 to DN 32 DVGW tested and registered.

DN 10 to DN 50 with type approval certificate for shipbuilding.

(Pressure loss charts, k_v and Zeta values, see following pages)

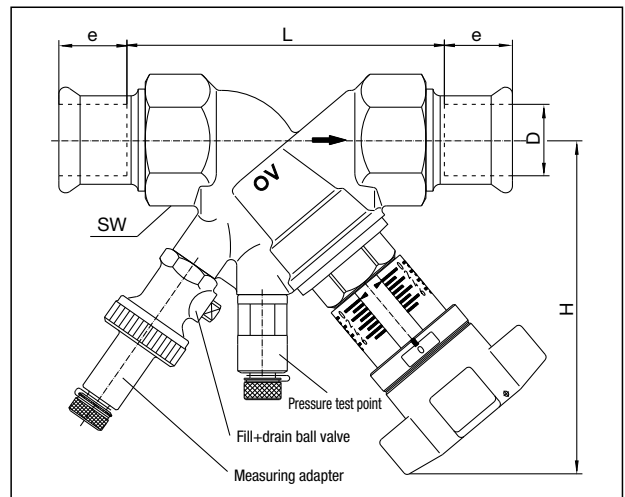
Double regulating and commissioning valves both ports male thread and collar nut, with threaded ports for accessories sets (closed with blind plugs)

| | | Item no. |
|-------|--------|-----------|
| DN 10 | 3/8" | 106 05 03 |
| DN 15 | 1/2" | 106 05 04 |
| DN 20 | 3/4" | 106 05 06 |
| DN 25 | 1" | 106 05 08 |
| DN 32 | 1 1/4" | 106 05 10 |
| DN 40 | 1 1/2" | 106 05 12 |
| DN 50 | 2" | 106 05 16 |

Accessories sets:

| | Item no. |
|--|-----------|
| 1 fill and drain ball valve | 106 01 91 |
| 2 pressure test points | 106 02 81 |
| 1 pressure test point | |
| 1 fill and drain ball valve | 106 03 81 |
| 1 extension for accessories sets (80 mm) | 106 02 95 |
| 1 extension for accessories sets (40 mm) | 168 82 95 |
| 1 measuring adapter | 106 02 98 |
| 1 stem extension (DN 20 to DN 50, 35 mm) | 168 82 96 |
| Lead sealing set (10-fold) | 108 90 91 |
| Locking set (1-fold) | 106 01 80 |

Dimensions:

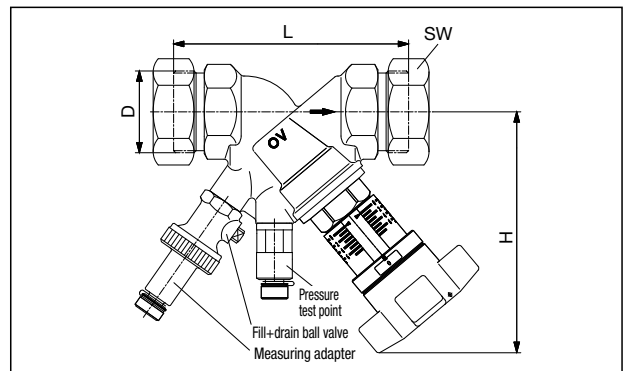


| DN | D | e | L | H | SW* |
|----|----|------|-------|-----|-----|
| 15 | 15 | 18 | 85 | 114 | 27 |
| 15 | 18 | 20 | 85 | 114 | 27 |
| 20 | 22 | 24 | 91 | 116 | 32 |
| 25 | 28 | 27 | 104.5 | 119 | 41 |
| 32 | 35 | 32 | 119 | 136 | 50 |
| 40 | 42 | 37.5 | 129 | 138 | 55 |
| 50 | 54 | 42.5 | 159 | 148 | 70 |

"Hydrocontrol VPR"

*SW = spanner size

Dimensions:



| DN | D ISO 228 | L | H | SW* |
|----|-----------|-----|-----|-----|
| 10 | G 5/8 | 86 | 114 | 26 |
| 15 | G 3/4 | 88 | 114 | 30 |
| 20 | G 1 | 93 | 116 | 37 |
| 25 | G 1 1/4 | 110 | 119 | 46 |
| 32 | G 1 1/2 | 110 | 136 | 52 |
| 40 | G 1 3/4 | 120 | 138 | 58 |
| 50 | G 2 3/8 | 150 | 148 | 75 |

"Hydrocontrol VTR"

*SW = spanner size

**Bronze double regulating and commissioning valves PN 16/PN 25
"Hydrocontrol VTR/VPR"**

Dimensions:

| DN | D1 | L1 | L2 | D2 EN 10226 | L3 | L4 | D3 | L5 | D4 EN 10226 | L6 | L7 |
|----|----|----|----|----------------|----|------|------|----|----------------|----|------|
| 10 | - | - | - | R 3/8 | 25 | 10.1 | 16 | 50 | - | - | - |
| 15 | 15 | 18 | 12 | R 1/2 | 31 | 13.2 | 20.5 | 50 | Rp 1/2 | 37 | 13.2 |
| 20 | 18 | 23 | 15 | R 3/4 | 34 | 14.5 | 26 | 50 | Rp 3/4 | 39 | 14.5 |
| 20 | 22 | 24 | 17 | - | - | - | - | - | - | - | - |
| 25 | 28 | 27 | 20 | R 1 | 40 | 16.8 | 33 | 60 | Rp 1 | 53 | 16.8 |
| 32 | 35 | 32 | 25 | R 1 1/4 | 46 | 19.1 | 41 | 60 | Rp 1 1/4 | 55 | 19.1 |
| 40 | 42 | 37 | 29 | R 1 1/2 | 49 | 19.1 | 47.5 | 65 | - | - | - |
| 50 | 54 | 50 | 40 | R 2 | 55 | 23.4 | 60 | 65 | - | - | - |

Tailpipe sets:

| | |
|----------------------|-----------|
| 2 weldable tailpipes | Item no. |
| for valve DN 10 | 106 05 91 |
| for valve DN 15 | 106 05 92 |
| for valve DN 20 | 106 05 93 |
| for valve DN 25 | 106 05 94 |
| for valve DN 32 | 106 05 95 |
| for valve DN 40 | 106 05 96 |
| for valve DN 50 | 106 05 97 |

2 solder tailpipes

| | | |
|-------|-----------------|-----------|
| 15 mm | for valve DN 15 | 106 10 92 |
| 18 mm | for valve DN 20 | 106 10 93 |
| 22 mm | for valve DN 20 | 106 10 94 |
| 28 mm | for valve DN 25 | 106 10 95 |
| 35 mm | for valve DN 32 | 106 10 96 |
| 42 mm | for valve DN 40 | 106 10 97 |
| 54 mm | for valve DN 50 | 106 10 98 |

2 tailpipes with male thread

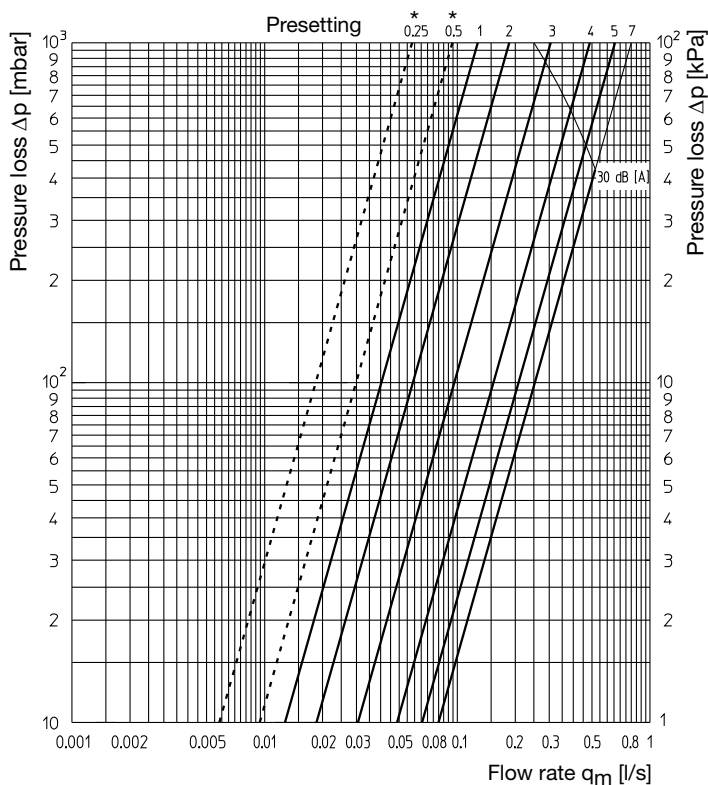
| | | |
|---------|-----------------|-----------|
| R 3/8 | for valve DN 10 | 106 14 91 |
| R 1/2 | for valve DN 15 | 106 14 92 |
| R 3/4 | for valve DN 20 | 106 14 93 |
| R 1 | for valve DN 25 | 106 14 94 |
| R 1 1/4 | for valve DN 32 | 106 14 95 |
| R 1 1/2 | for valve DN 40 | 106 14 96 |
| R 2 | for valve DN 50 | 106 14 97 |

2 tailpipes with female thread

| | | |
|----------|-----------------|-----------|
| Rp 1/2 | for valve DN 15 | 101 93 64 |
| Rp 3/4 | for valve DN 20 | 101 93 66 |
| Rp 1 | for valve DN 25 | 106 13 94 |
| Rp 1 1/4 | for valve DN 32 | 106 13 95 |

Flow charts for double regulating and commissioning valves:

DN 10

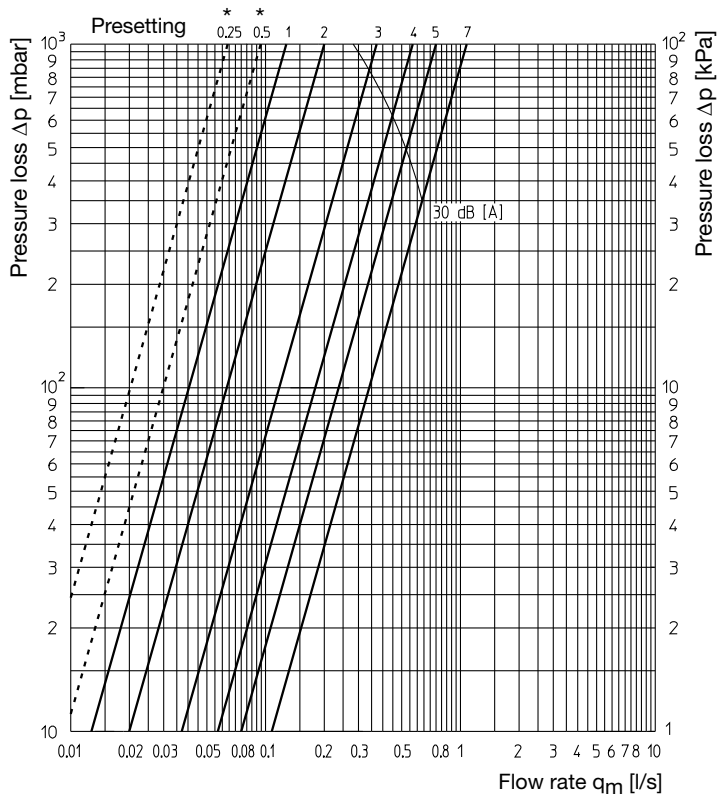


| Turn | k_y -value | Zeta-value | Turn | k_y -value | Zeta-value |
|------|--------------|------------|------|--------------|------------|
| 0.25 | 0.21 | 885 | | | |
| 0.5 | 0.34 | 335 | | | |
| 0.75 | 0.40 | 244 | | | |
| 1. | 0.46 | 184 | | | |
| 1.1 | 0.48 | 169 | 5. | 2.37 | 6.9 |
| 1.2 | 0.50 | 156 | 5.1 | 2.42 | 6.7 |
| 1.3 | 0.52 | 144 | 5.2 | 2.47 | 6.4 |
| 1.4 | 0.54 | 134 | 5.3 | 2.52 | 6.1 |
| 1.5 | 0.56 | 124 | 5.4 | 2.56 | 6.0 |
| 1.6 | 0.58 | 116 | 5.5 | 2.60 | 5.8 |
| 1.7 | 0.60 | 108 | 5.6 | 2.63 | 5.6 |
| 1.8 | 0.63 | 98 | 5.7 | 2.66 | 5.5 |
| 1.9 | 0.65 | 92 | 5.8 | 2.69 | 5.4 |
| | | | 5.9 | 2.72 | 5.3 |
| 2. | 0.67 | 87 | 6. | 2.75 | 5.2 |
| 2.1 | 0.70 | 80 | 6.1 | 2.77 | 5.1 |
| 2.2 | 0.73 | 73 | 6.2 | 2.79 | 5.0 |
| 2.3 | 0.76 | 68 | 6.3 | 2.81 | 4.9 |
| 2.4 | 0.79 | 63 | 6.4 | 2.83 | 4.9 |
| 2.5 | 0.83 | 57 | 6.5 | 2.84 | 4.8 |
| 2.6 | 0.87 | 52 | 6.6 | 2.85 | 4.8 |
| 2.7 | 0.91 | 47 | 6.7 | 2.86 | 4.8 |
| 2.8 | 0.96 | 42 | 6.8 | 2.87 | 4.7 |
| 2.9 | 1.03 | 37 | 6.9 | 2.87 | 4.7 |
| 3. | 1.10 | 32 | 7. | 2.88 | 4.7 |
| 3.1 | 1.16 | 29 | | | |
| 3.2 | 1.23 | 26 | | | |
| 3.3 | 1.29 | 23 | | | |
| 3.4 | 1.36 | 21 | | | |
| 3.5 | 1.42 | 19 | | | |
| 3.6 | 1.49 | 18 | | | |
| 3.7 | 1.56 | 16 | | | |
| 3.8 | 1.62 | 15 | | | |
| 3.9 | 1.69 | 14 | | | |
| 4. | 1.76 | 13 | | | |
| 4.1 | 1.82 | 12 | | | |
| 4.2 | 1.88 | 11 | | | |
| 4.3 | 1.94 | 10 | | | |
| 4.4 | 2.00 | 9.8 | | | |
| 4.5 | 2.06 | 9.2 | | | |
| 4.6 | 2.12 | 8.7 | | | |
| 4.7 | 2.19 | 8.1 | | | |
| 4.8 | 2.25 | 7.7 | | | |
| 4.9 | 2.31 | 7.3 | | | |

* Avoid presetting < 1, see tolerance curve page 9.

Flow charts for double regulating and commissioning valves:

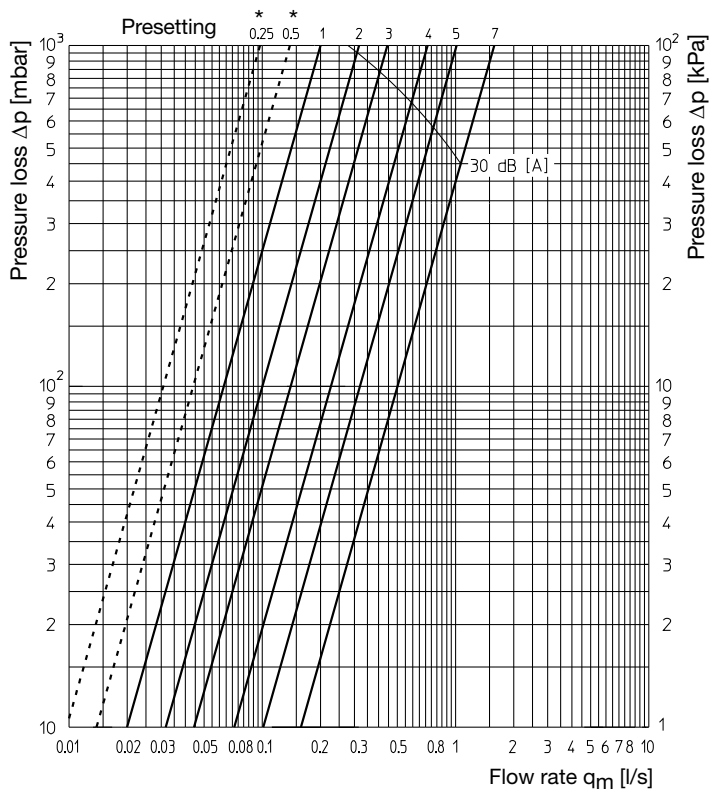
DN 15



* Avoid presetting < 1, see tolerance curve page 9.

| Turn | k_V -value | Zeta-value | Turn | k_V -value | Zeta-value | Turn | k_V -value | Zeta-value |
|------|--------------|------------|------|--------------|------------|------|--------------|------------|
| 0.25 | 0.23 | 1981 | | | | | | |
| 0.5 | 0.34 | 906 | | | | | | |
| 0.75 | 0.40 | 655 | | | | | | |
| 1. | 0.46 | 495 | 5. | 2.70 | 14 | | | |
| 1.1 | 0.48 | 455 | 5.1 | 2.77 | 14 | | | |
| 1.2 | 0.50 | 419 | 5.2 | 2.84 | 13 | | | |
| 1.3 | 0.52 | 388 | 5.3 | 2.92 | 12 | | | |
| 1.4 | 0.55 | 346 | 5.4 | 2.99 | 12 | | | |
| 1.5 | 0.57 | 323 | 5.5 | 3.06 | 11 | | | |
| 1.6 | 0.60 | 291 | 5.6 | 3.13 | 11 | | | |
| 1.7 | 0.63 | 264 | 5.7 | 3.20 | 10 | | | |
| 1.8 | 0.66 | 241 | 5.8 | 3.27 | 9.8 | | | |
| 1.9 | 0.69 | 220 | 5.9 | 3.34 | 9.4 | | | |
| 2. | 0.72 | 202 | 6. | 3.40 | 9.1 | | | |
| 2.1 | 0.76 | 181 | 6.1 | 3.47 | 8.7 | | | |
| 2.2 | 0.80 | 164 | 6.2 | 3.54 | 8.4 | | | |
| 2.3 | 0.85 | 145 | 6.3 | 3.61 | 8.0 | | | |
| 2.4 | 0.91 | 127 | 6.4 | 3.67 | 7.8 | | | |
| 2.5 | 0.98 | 109 | 6.5 | 3.72 | 7.6 | | | |
| 2.6 | 1.05 | 95 | 6.6 | 3.76 | 7.4 | | | |
| 2.7 | 1.12 | 84 | 6.7 | 3.79 | 7.3 | | | |
| 2.8 | 1.20 | 73 | 6.8 | 3.82 | 7.2 | | | |
| 2.9 | 1.27 | 65 | 6.9 | 3.85 | 7.1 | | | |
| 3. | 1.34 | 58 | 7. | 3.88 | 7 | | | |
| 3.1 | 1.41 | 53 | | | | | | |
| 3.2 | 1.48 | 48 | | | | | | |
| 3.3 | 1.55 | 44 | | | | | | |
| 3.4 | 1.62 | 40 | | | | | | |
| 3.5 | 1.70 | 36 | | | | | | |
| 3.6 | 1.77 | 33 | | | | | | |
| 3.7 | 1.84 | 31 | | | | | | |
| 3.8 | 1.91 | 29 | | | | | | |
| 3.9 | 1.98 | 27 | | | | | | |
| 4. | 2.05 | 25 | | | | | | |
| 4.1 | 2.12 | 23 | | | | | | |
| 4.2 | 2.18 | 22 | | | | | | |
| 4.3 | 2.24 | 21 | | | | | | |
| 4.4 | 2.31 | 20 | | | | | | |
| 4.5 | 2.38 | 18 | | | | | | |
| 4.6 | 2.44 | 18 | | | | | | |
| 4.7 | 2.51 | 17 | | | | | | |
| 4.8 | 2.57 | 16 | | | | | | |
| 4.9 | 2.63 | 15 | | | | | | |

DN 20

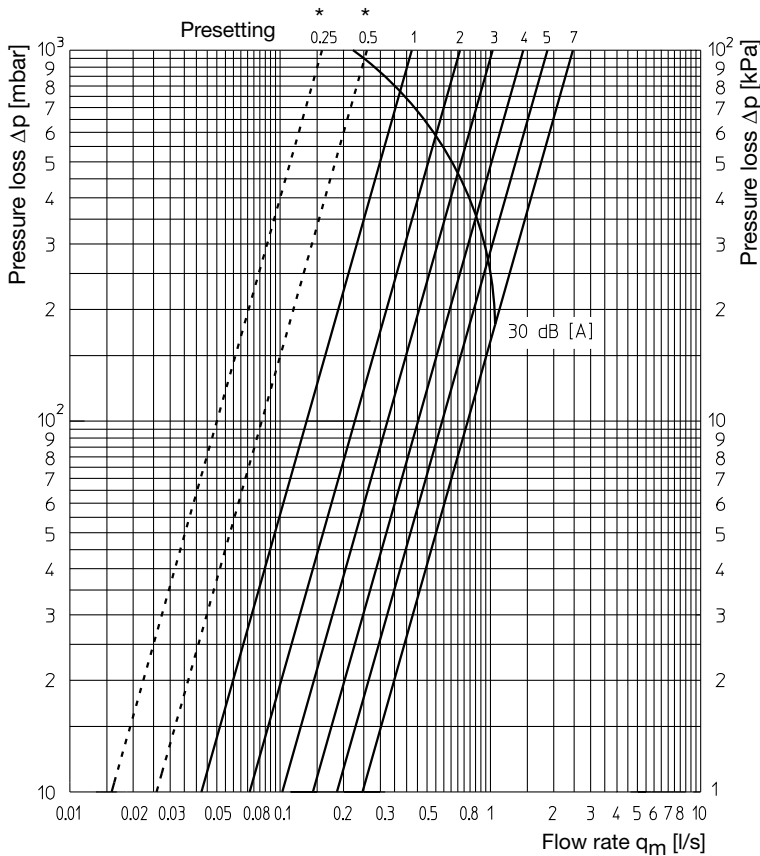


* Avoid presetting < 1, see tolerance curve page 9.

| Turn | k_V -value | Zeta-value | Turn | k_V -value | Zeta-value | Turn | k_V -value | Zeta-value |
|------|--------------|------------|------|--------------|------------|------|--------------|------------|
| 0.25 | 0.35 | 2841 | | | | | | |
| 0.5 | 0.50 | 1392 | | | | | | |
| 0.75 | 0.63 | 877 | | | | | | |
| 1. | 0.72 | 671 | 5. | 3.65 | 26 | | | |
| 1.1 | 0.76 | 603 | 5.1 | 3.78 | 24 | | | |
| 1.2 | 0.81 | 530 | 5.2 | 3.90 | 23 | | | |
| 1.3 | 0.85 | 482 | 5.3 | 4.02 | 22 | | | |
| 1.4 | 0.89 | 439 | 5.4 | 4.15 | 20 | | | |
| 1.5 | 0.93 | 402 | 5.5 | 4.27 | 19 | | | |
| 1.6 | 0.97 | 370 | 5.6 | 4.40 | 17 | | | |
| 1.7 | 1.01 | 341 | 5.7 | 4.52 | 17 | | | |
| 1.8 | 1.05 | 316 | 5.8 | 4.65 | 16 | | | |
| 1.9 | 1.10 | 288 | 5.9 | 4.77 | 15 | | | |
| 2. | 1.14 | 268 | 6. | 4.89 | 15 | | | |
| 2.1 | 1.18 | 250 | 6.1 | 5.02 | 14 | | | |
| 2.2 | 1.22 | 234 | 6.2 | 5.15 | 13 | | | |
| 2.3 | 1.26 | 219 | 6.3 | 5.28 | 12 | | | |
| 2.4 | 1.30 | 206 | 6.4 | 5.36 | 12 | | | |
| 2.5 | 1.35 | 191 | 6.5 | 5.44 | 12 | | | |
| 2.6 | 1.40 | 178 | 6.6 | 5.50 | 12 | | | |
| 2.7 | 1.45 | 166 | 6.7 | 5.56 | 11 | | | |
| 2.8 | 1.50 | 155 | 6.8 | 5.61 | 11 | | | |
| 2.9 | 1.55 | 145 | 6.9 | 5.66 | 11 | | | |
| 3. | 1.60 | 136 | 7. | 5.71 | 11 | | | |
| 3.1 | 1.66 | 126 | | | | | | |
| 3.2 | 1.74 | 115 | | | | | | |
| 3.3 | 1.82 | 105 | | | | | | |
| 3.4 | 1.93 | 93 | | | | | | |
| 3.5 | 2.04 | 84 | | | | | | |
| 3.6 | 2.15 | 75 | | | | | | |
| 3.7 | 2.25 | 69 | | | | | | |
| 3.8 | 2.36 | 62 | | | | | | |
| 3.9 | 2.47 | 57 | | | | | | |
| 4. | 2.58 | 52 | | | | | | |
| 4.1 | 2.69 | 48 | | | | | | |
| 4.2 | 2.80 | 44 | | | | | | |
| 4.3 | 2.91 | 41 | | | | | | |
| 4.4 | 3.01 | 38 | | | | | | |
| 4.5 | 3.12 | 36 | | | | | | |
| 4.6 | 3.23 | 33 | | | | | | |
| 4.7 | 3.34 | 31 | | | | | | |
| 4.8 | 3.44 | 29 | | | | | | |
| 4.9 | 3.55 | 28 | | | | | | |

Flow charts for double regulating and commissioning valves:

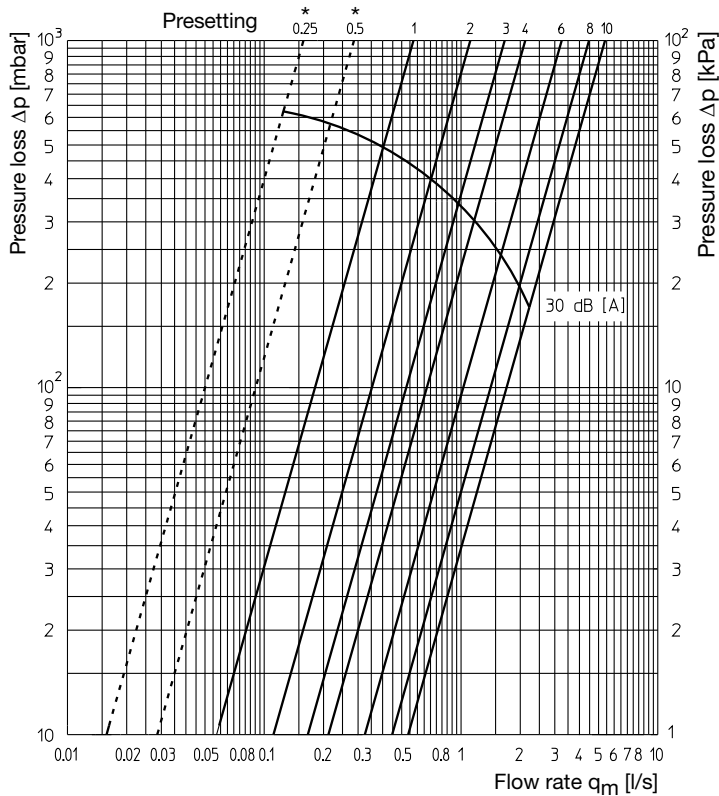
DN 25



| Turn | k_V -value | Zeta-value | Turn | k_V -value | Zeta-value | Turn | k_V -value | Zeta-value |
|------|--------------|------------|------|--------------|------------|------|--------------|------------|
| 0.25 | 0.57 | 2774 | | | | | | |
| 0.5 | 0.93 | 1042 | | | | | | |
| 0.75 | 1.22 | 605 | | | | | | |
| 1. | 1.52 | 390 | 5. | 6.72 | 20 | | | |
| 1.1 | 1.64 | 335 | 5.1 | 6.84 | 19 | | | |
| 1.2 | 1.76 | 291 | 5.2 | 6.96 | 19 | | | |
| 1.3 | 1.87 | 258 | 5.3 | 7.08 | 18 | | | |
| 1.4 | 1.98 | 230 | 5.4 | 7.20 | 17 | | | |
| 1.5 | 2.08 | 208 | 5.5 | 7.32 | 17 | | | |
| 1.6 | 2.18 | 190 | 5.6 | 7.44 | 16 | | | |
| 1.7 | 2.28 | 173 | 5.7 | 7.56 | 16 | | | |
| 1.8 | 2.38 | 159 | 5.8 | 7.68 | 15 | | | |
| 1.9 | 2.48 | 147 | 5.9 | 7.80 | 15 | | | |
| 2. | 2.58 | 135 | 6. | 7.91 | 14 | | | |
| 2.1 | 2.67 | 126 | 6.1 | 8.02 | 14 | | | |
| 2.2 | 2.77 | 117 | 6.2 | 8.12 | 14 | | | |
| 2.3 | 2.87 | 109 | 6.3 | 8.22 | 13 | | | |
| 2.4 | 2.98 | 101 | 6.4 | 8.31 | 13 | | | |
| 2.5 | 3.09 | 94 | 6.5 | 8.41 | 13 | | | |
| 2.6 | 3.20 | 88 | 6.6 | 8.51 | 12 | | | |
| 2.7 | 3.31 | 82 | 6.7 | 8.61 | 12 | | | |
| 2.8 | 3.43 | 77 | 6.8 | 8.71 | 12 | | | |
| 2.9 | 3.56 | 71 | 6.9 | 8.80 | 12 | | | |
| 3. | 3.69 | 66 | 7. | 8.89 | 11 | | | |
| 3.1 | 3.82 | 62 | | | | | | |
| 3.2 | 3.96 | 57 | | | | | | |
| 3.3 | 4.11 | 53 | | | | | | |
| 3.4 | 4.26 | 50 | | | | | | |
| 3.5 | 4.42 | 46 | | | | | | |
| 3.6 | 4.57 | 43 | | | | | | |
| 3.7 | 4.72 | 40 | | | | | | |
| 3.8 | 4.87 | 38 | | | | | | |
| 3.9 | 5.02 | 36 | | | | | | |
| 4. | 5.16 | 34 | | | | | | |
| 4.1 | 5.32 | 32 | | | | | | |
| 4.2 | 5.47 | 30 | | | | | | |
| 4.3 | 5.63 | 28 | | | | | | |
| 4.4 | 5.79 | 27 | | | | | | |
| 4.5 | 5.95 | 25 | | | | | | |
| 4.6 | 6.10 | 24 | | | | | | |
| 4.7 | 6.26 | 23 | | | | | | |
| 4.8 | 6.42 | 22 | | | | | | |
| 4.9 | 6.57 | 21 | | | | | | |

* Avoid presetting < 1, see tolerance curve page 9.

DN 32

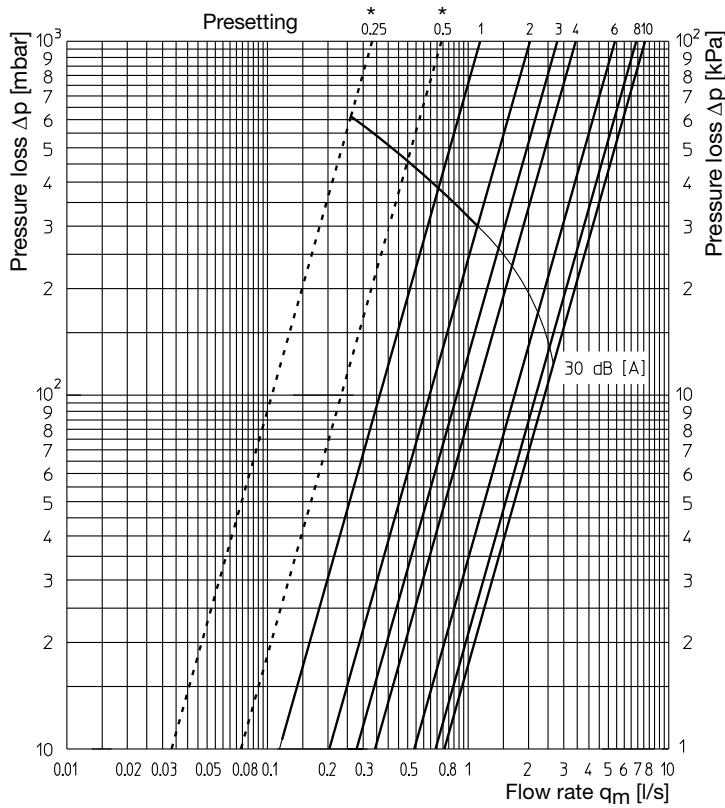


| Turn | k_V -value | Zeta-value | Turn | k_V -value | Zeta-value | Turn | k_V -value | Zeta-value |
|------|--------------|------------|------|--------------|------------|------|--------------|------------|
| 0.25 | 0.57 | 8174 | | | | | | |
| 0.5 | 1.03 | 2503 | | | | | | |
| 0.75 | 1.53 | 1135 | | | | | | |
| 1. | 2.06 | 626 | 5. | 9.69 | 28 | 9. | 18.18 | 8.0 |
| 1.1 | 2.20 | 549 | 5.1 | 9.90 | 27 | 9.1 | 18.35 | 7.9 |
| 1.2 | 2.35 | 481 | 5.2 | 10.10 | 26 | 9.2 | 18.50 | 7.8 |
| 1.3 | 2.52 | 418 | 5.3 | 10.30 | 25 | 9.3 | 18.65 | 7.6 |
| 1.4 | 2.70 | 364 | 5.4 | 10.50 | 24 | 9.4 | 18.80 | 7.5 |
| 1.5 | 2.90 | 316 | 5.5 | 10.70 | 23 | 9.5 | 18.93 | 7.4 |
| 1.6 | 3.10 | 276 | 5.6 | 10.90 | 22 | 9.6 | 19.05 | 7.3 |
| 1.7 | 3.32 | 241 | 5.7 | 11.10 | 22 | 9.7 | 19.15 | 7.2 |
| 1.8 | 3.55 | 211 | 5.8 | 11.30 | 21 | 9.8 | 19.25 | 7.2 |
| 1.9 | 3.78 | 186 | 5.9 | 11.50 | 20 | 9.9 | 19.35 | 7.1 |
| 2. | 4.02 | 164 | 6. | 11.70 | 19 | | | |
| 2.1 | 4.25 | 147 | 6.1 | 11.90 | 19 | 10. | 19.45 | 7.0 |
| 2.2 | 4.48 | 132 | 6.2 | 12.12 | 18 | | | |
| 2.3 | 4.68 | 121 | 6.3 | 12.35 | 17 | | | |
| 2.4 | 4.88 | 112 | 6.4 | 12.57 | 17 | | | |
| 2.5 | 5.08 | 103 | 6.5 | 12.80 | 16 | | | |
| 2.6 | 5.25 | 96 | 6.6 | 13.00 | 16 | | | |
| 2.7 | 5.45 | 89 | 6.7 | 13.22 | 15 | | | |
| 2.8 | 5.65 | 83 | 6.8 | 13.45 | 15 | | | |
| 2.9 | 5.83 | 78 | 6.9 | 13.68 | 14 | | | |
| 3. | 6.00 | 74 | 7. | 13.91 | 14 | | | |
| 3.1 | 6.17 | 70 | 7.1 | 14.13 | 13 | | | |
| 3.2 | 6.35 | 66 | 7.2 | 14.35 | 13 | | | |
| 3.3 | 6.52 | 62 | 7.3 | 14.57 | 13 | | | |
| 3.4 | 6.70 | 59 | 7.4 | 14.80 | 12 | | | |
| 3.5 | 6.85 | 57 | 7.5 | 15.02 | 12 | | | |
| 3.6 | 7.00 | 54 | 7.6 | 15.24 | 11 | | | |
| 3.7 | 7.16 | 52 | 7.7 | 15.46 | 11 | | | |
| 3.8 | 7.33 | 49 | 7.8 | 15.68 | 11 | | | |
| 3.9 | 7.49 | 47 | 7.9 | 15.90 | 11 | | | |
| 4. | 7.64 | 45 | 8. | 16.11 | 10 | | | |
| 4.1 | 7.85 | 43 | 8.1 | 16.33 | 10 | | | |
| 4.2 | 8.05 | 41 | 8.2 | 16.55 | 9.7 | | | |
| 4.3 | 8.25 | 39 | 8.3 | 16.77 | 9.4 | | | |
| 4.4 | 8.45 | 37 | 8.4 | 16.98 | 9.2 | | | |
| 4.5 | 8.65 | 35 | 8.5 | 17.17 | 9.0 | | | |
| 4.6 | 8.85 | 34 | 8.6 | 17.36 | 8.8 | | | |
| 4.7 | 9.05 | 32 | 8.7 | 17.57 | 8.6 | | | |
| 4.8 | 9.25 | 31 | 8.8 | 17.78 | 8.4 | | | |
| 4.9 | 9.47 | 30 | 8.9 | 17.98 | 8.2 | | | |

* Avoid presetting < 1, see tolerance curve page 9.

Flow charts for double regulating and commissioning valves:

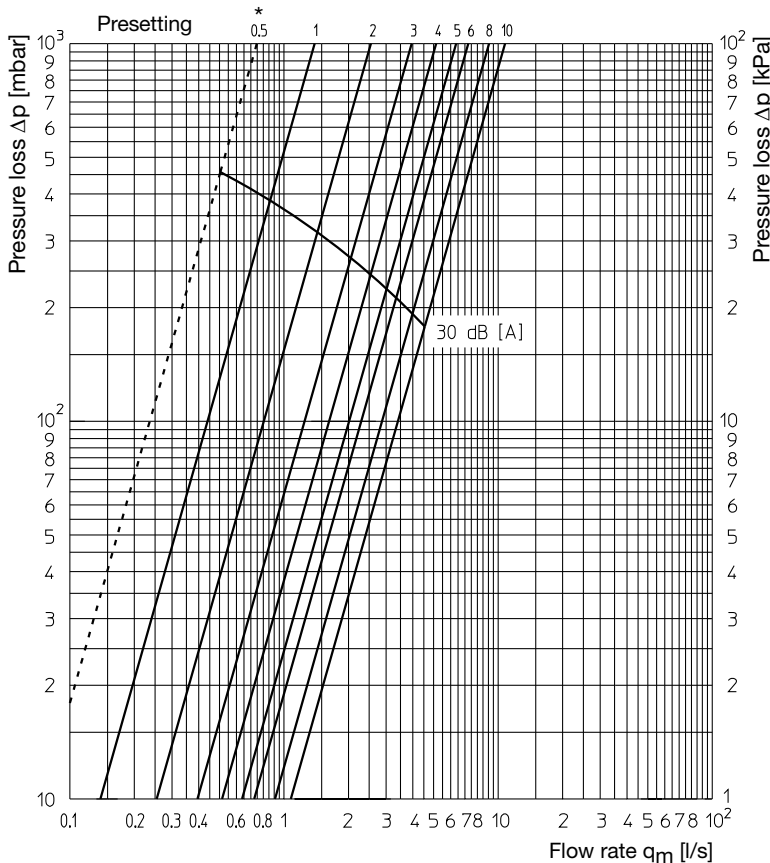
DN 40



* Avoid presetting < 1, see tolerance curve page 9.

| Turn | k_v -value | Zeta-value | Turn | k_v -value | Zeta-value | Turn | k_v -value | Zeta-value |
|------|--------------|------------|------|--------------|------------|------|--------------|------------|
| 0.25 | 1.20 | 3390 | | | | | | |
| 0.5 | 2.66 | 690 | | | | | | |
| 0.75 | 3.54 | 390 | | | | | | |
| 1. | 4.13 | 286 | 5. | 15.26 | 21 | 9 | 26.09 | 7.2 |
| 1.1 | 4.46 | 245 | 5.1 | 15.65 | 20 | 9.1 | 26.24 | 7.1 |
| 1.2 | 4.78 | 214 | 5.2 | 16.10 | 19 | 9.2 | 26.38 | 7.0 |
| 1.3 | 5.10 | 188 | 5.3 | 16.55 | 18 | 9.3 | 26.52 | 6.9 |
| 1.4 | 5.42 | 166 | 5.4 | 16.95 | 17 | 9.4 | 26.66 | 6.9 |
| 1.5 | 5.74 | 148 | 5.5 | 17.35 | 16 | 9.5 | 26.80 | 6.8 |
| 1.6 | 6.06 | 133 | 5.6 | 17.80 | 15 | 9.6 | 26.94 | 6.7 |
| 1.7 | 6.38 | 120 | 5.7 | 18.20 | 15 | 9.7 | 27.08 | 6.7 |
| 1.8 | 6.70 | 109 | 5.8 | 18.65 | 14 | 9.8 | 27.22 | 6.6 |
| 1.9 | 7.02 | 99 | 5.9 | 19.05 | 13 | 9.9 | 27.37 | 6.5 |
| 2. | 7.34 | 91 | 6. | 19.45 | 13 | 10. | 27.51 | 6.4 |
| 2.1 | 7.62 | 84 | 6.1 | 19.75 | 13 | | | |
| 2.2 | 7.89 | 78 | 6.2 | 20.05 | 12 | | | |
| 2.3 | 8.16 | 73 | 6.3 | 20.35 | 12 | | | |
| 2.4 | 8.43 | 69 | 6.4 | 20.65 | 11 | | | |
| 2.5 | 8.70 | 64 | 6.5 | 20.95 | 11 | | | |
| 2.6 | 8.97 | 61 | 6.6 | 21.25 | 10 | | | |
| 2.7 | 9.24 | 57 | 6.7 | 21.55 | 10 | | | |
| 2.8 | 9.51 | 54 | 6.8 | 21.85 | 10 | | | |
| 2.9 | 9.77 | 51 | 6.9 | 22.15 | 9.9 | | | |
| 3. | 10.02 | 49 | 7. | 22.45 | 9.7 | | | |
| 3.1 | 10.25 | 46 | 7.1 | 22.70 | 9.5 | | | |
| 3.2 | 10.50 | 44 | 7.2 | 22.95 | 9.3 | | | |
| 3.3 | 10.73 | 42 | 7.3 | 23.15 | 9.1 | | | |
| 3.4 | 10.97 | 41 | 7.4 | 23.35 | 9.0 | | | |
| 3.5 | 11.20 | 39 | 7.5 | 23.62 | 8.7 | | | |
| 3.6 | 11.43 | 37 | 7.6 | 23.87 | 8.6 | | | |
| 3.7 | 11.66 | 36 | 7.7 | 24.10 | 8.4 | | | |
| 3.8 | 11.90 | 34 | 7.8 | 24.35 | 8.2 | | | |
| 3.9 | 12.13 | 33 | 7.9 | 24.58 | 8.1 | | | |
| 4. | 12.36 | 32 | 8. | 24.82 | 7.9 | | | |
| 4.1 | 12.65 | 31 | 8.1 | 24.95 | 7.8 | | | |
| 4.2 | 12.95 | 29 | 8.2 | 25.07 | 7.7 | | | |
| 4.3 | 13.25 | 28 | 8.3 | 25.20 | 7.7 | | | |
| 4.4 | 13.52 | 27 | 8.4 | 25.32 | 7.6 | | | |
| 4.5 | 13.80 | 26 | 8.5 | 25.45 | 7.5 | | | |
| 4.6 | 14.10 | 25 | 8.6 | 25.57 | 7.5 | | | |
| 4.7 | 14.40 | 24 | 8.7 | 25.70 | 7.4 | | | |
| 4.8 | 14.70 | 23 | 8.8 | 25.83 | 7.3 | | | |
| 4.9 | 14.98 | 22 | 8.9 | 25.96 | 7.2 | | | |

DN 50

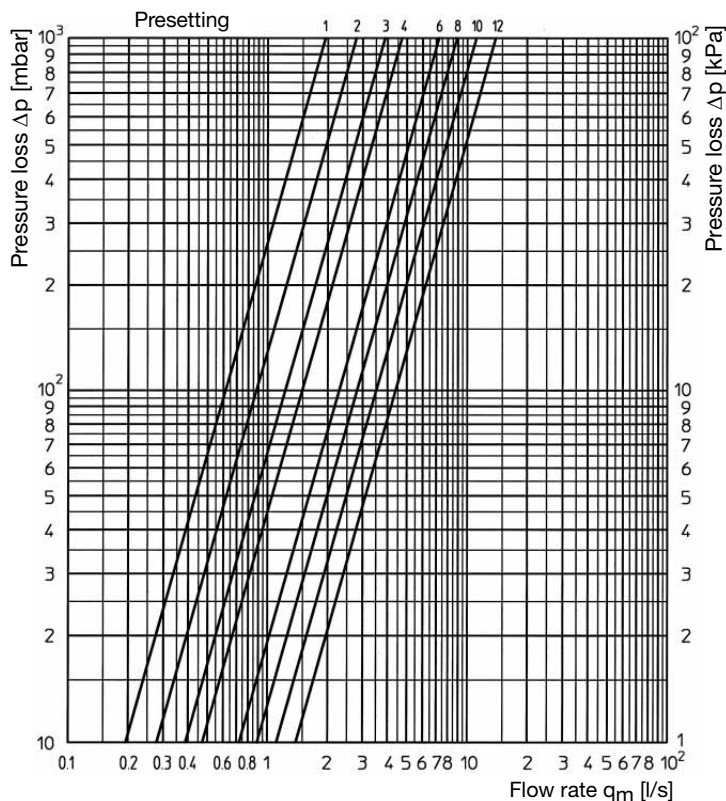


* Avoid presetting < 1, see tolerance curve page 9.

| Turn | k_v -value | Zeta-value | Turn | k_v -value | Zeta-value | Turn | k_v -value | Zeta-value |
|------|--------------|------------|------|--------------|------------|------|--------------|------------|
| 0.5 | 2.69 | 1743 | | | | | | |
| 0.75 | 4.17 | 726 | | | | | | |
| 1. | 5.06 | 493 | 5. | 22.93 | 24 | 9. | 36.68 | 9.4 |
| 1.1 | 5.50 | 417 | 5.1 | 23.25 | 23 | 9.1 | 37.00 | 9.2 |
| 1.2 | 5.95 | 356 | 5.2 | 23.57 | 23 | 9.2 | 37.25 | 9.1 |
| 1.3 | 6.35 | 313 | 5.3 | 23.90 | 22 | 9.3 | 37.50 | 9.0 |
| 1.4 | 6.75 | 277 | 5.4 | 24.20 | 22 | 9.4 | 37.75 | 8.9 |
| 1.5 | 7.15 | 247 | 5.5 | 24.50 | 21 | 9.5 | 37.95 | 8.8 |
| 1.6 | 7.55 | 221 | 5.6 | 24.80 | 21 | 9.6 | 38.15 | 8.7 |
| 1.7 | 7.95 | 200 | 5.7 | 25.15 | 20 | 9.7 | 38.35 | 8.6 |
| 1.8 | 8.40 | 179 | 5.8 | 25.45 | 19 | 9.8 | 38.50 | 8.5 |
| 1.9 | 8.80 | 163 | 5.9 | 25.80 | 19 | 9.9 | 38.65 | 8.5 |
| 2. | 9.17 | 150 | 6. | 26.09 | 19 | 10. | 38.78 | 8.4 |
| 2.1 | 9.65 | 135 | 6.1 | 26.45 | 18 | | | |
| 2.2 | 10.15 | 122 | 6.2 | 26.80 | 18 | | | |
| 2.3 | 10.65 | 111 | 6.3 | 27.10 | 17 | | | |
| 2.4 | 11.15 | 101 | 6.4 | 27.45 | 17 | | | |
| 2.5 | 11.65 | 93 | 6.5 | 27.75 | 16 | | | |
| 2.6 | 12.15 | 85 | 6.6 | 28.05 | 16 | | | |
| 2.7 | 12.65 | 79 | 6.7 | 28.40 | 16 | | | |
| 2.8 | 13.20 | 72 | 6.8 | 28.75 | 15 | | | |
| 2.9 | 13.70 | 67 | 6.9 | 29.10 | 15 | | | |
| 3. | 14.23 | 62 | 7. | 29.41 | 15 | | | |
| 3.1 | 14.65 | 59 | 7.1 | 29.75 | 14 | | | |
| 3.2 | 15.10 | 55 | 7.2 | 30.10 | 14 | | | |
| 3.3 | 15.50 | 53 | 7.3 | 30.40 | 14 | | | |
| 3.4 | 15.95 | 50 | 7.4 | 30.75 | 13 | | | |
| 3.5 | 16.35 | 47 | 7.5 | 31.10 | 13 | | | |
| 3.6 | 16.80 | 45 | 7.6 | 31.45 | 13 | | | |
| 3.7 | 17.25 | 42 | 7.7 | 31.80 | 12 | | | |
| 3.8 | 17.65 | 40 | 7.8 | 32.10 | 12 | | | |
| 3.9 | 18.10 | 39 | 7.9 | 32.45 | 12 | | | |
| 4. | 18.50 | 37 | 8. | 32.73 | 12 | | | |
| 4.1 | 19.00 | 35 | 8.1 | 33.15 | 11 | | | |
| 4.2 | 19.45 | 33 | 8.2 | 33.55 | 11 | | | |
| 4.3 | 19.85 | 32 | 8.3 | 33.90 | 11 | | | |
| 4.4 | 20.30 | 31 | 8.4 | 34.30 | 11 | | | |
| 4.5 | 20.70 | 29 | 8.5 | 34.70 | 10 | | | |
| 4.6 | 21.15 | 28 | 8.6 | 35.10 | 10 | | | |
| 4.7 | 21.60 | 27 | 8.7 | 35.50 | 10 | | | |
| 4.8 | 22.05 | 26 | 8.8 | 35.90 | 9.8 | | | |
| 4.9 | 22.50 | 25 | 8.9 | 36.30 | 9.6 | | | |

Flow charts for double regulating and commissioning valves:

DN 65



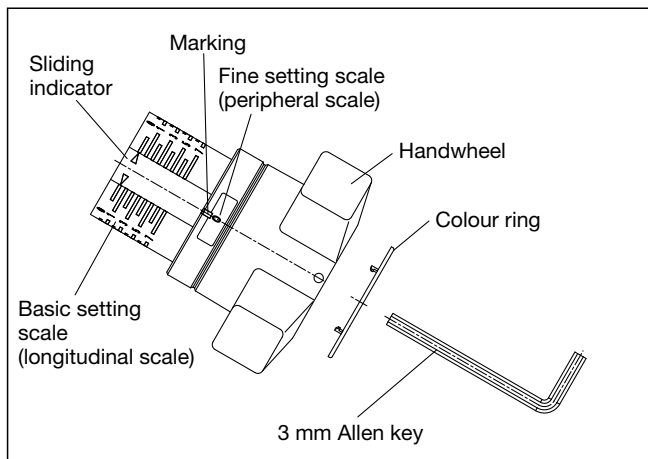
| Turn | k_v -value | Zeta-value | Turn | k_v -value | Zeta-value | Turn | k_v -value | Zeta-value |
|------|--------------|------------|------|--------------|------------|------|--------------|------------|
| 1. | 7.00 | 705 | 5. | 22.00 | 71 | 9. | 35.00 | 28 |
| 1.1 | 7.30 | 648 | 5.1 | 22.40 | 69 | 9.1 | 35.50 | 27 |
| 1.2 | 7.60 | 598 | 5.2 | 22.80 | 66 | 9.2 | 36.00 | 27 |
| 1.3 | 7.90 | 554 | 5.3 | 23.20 | 64 | 9.3 | 36.50 | 26 |
| 1.4 | 8.20 | 514 | 5.4 | 23.60 | 62 | 9.4 | 37.00 | 25 |
| 1.5 | 8.50 | 478 | 5.5 | 24.00 | 60 | 9.5 | 37.50 | 25 |
| 1.6 | 8.80 | 446 | 5.6 | 24.40 | 58 | 9.6 | 38.00 | 24 |
| 1.7 | 9.10 | 417 | 5.7 | 24.80 | 56 | 9.7 | 38.50 | 23 |
| 1.8 | 9.40 | 391 | 5.8 | 25.20 | 54 | 9.8 | 39.00 | 23 |
| 1.9 | 9.70 | 367 | 5.9 | 25.60 | 53 | 9.9 | 39.50 | 22 |
| 2. | 10.00 | 345 | 6. | 26.00 | 51 | 10. | 40.00 | 22 |
| 2.1 | 10.40 | 319 | 6.1 | 26.30 | 50 | 10.1 | 40.50 | 21 |
| 2.2 | 10.80 | 296 | 6.2 | 26.60 | 49 | 10.2 | 41.00 | 21 |
| 2.3 | 11.20 | 275 | 6.3 | 26.90 | 48 | 10.3 | 41.50 | 20 |
| 2.4 | 11.60 | 257 | 6.4 | 27.20 | 47 | 10.4 | 42.00 | 20 |
| 2.5 | 12.00 | 240 | 6.5 | 27.50 | 46 | 10.5 | 42.50 | 19 |
| 2.6 | 12.40 | 225 | 6.6 | 27.70 | 45 | 10.6 | 43.00 | 19 |
| 2.7 | 12.80 | 211 | 6.7 | 27.90 | 44 | 10.7 | 43.50 | 18 |
| 2.8 | 13.20 | 198 | 6.8 | 28.10 | 44 | 10.8 | 44.00 | 18 |
| 2.9 | 13.60 | 187 | 6.9 | 28.30 | 43 | 10.9 | 44.50 | 17 |
| 3. | 14.00 | 176 | 7. | 28.50 | 43 | 11. | 45.00 | 17 |
| 3.1 | 14.30 | 169 | 7.1 | 28.50 | 42 | 11.1 | 45.50 | 17 |
| 3.2 | 14.60 | 162 | 7.2 | 29.10 | 41 | 11.2 | 46.00 | 16 |
| 3.3 | 14.90 | 156 | 7.3 | 29.40 | 40 | 11.3 | 46.50 | 16 |
| 3.4 | 15.20 | 150 | 7.4 | 29.70 | 39 | 11.4 | 47.00 | 16 |
| 3.5 | 15.50 | 144 | 7.5 | 30.00 | 38 | 11.5 | 47.50 | 15 |
| 3.6 | 15.80 | 138 | 7.6 | 30.40 | 37 | 11.6 | 48.00 | 15 |
| 3.7 | 16.10 | 133 | 7.7 | 30.80 | 36 | 11.7 | 48.50 | 15 |
| 3.8 | 16.40 | 128 | 7.8 | 31.20 | 35 | 11.8 | 49.00 | 14 |
| 3.9 | 16.70 | 124 | 7.9 | 31.60 | 35 | 11.9 | 49.50 | 14 |
| 4. | 17.00 | 120 | 8. | 32.00 | 34 | 12. | 50.00 | 14 |
| 4.1 | 17.50 | 113 | 8.1 | 32.30 | 33 | | | |
| 4.2 | 18.00 | 107 | 8.2 | 32.60 | 33 | | | |
| 4.3 | 18.50 | 101 | 8.3 | 32.90 | 32 | | | |
| 4.4 | 19.00 | 96 | 8.4 | 33.20 | 31 | | | |
| 4.5 | 19.50 | 91 | 8.5 | 33.50 | 31 | | | |
| 4.6 | 20.00 | 86 | 8.6 | 33.80 | 30 | | | |
| 4.7 | 20.50 | 82 | 8.7 | 34.10 | 30 | | | |
| 4.7 | 21.00 | 78 | 8.8 | 34.40 | 29 | | | |
| 4.9 | 21.50 | 75 | 8.9 | 34.70 | 29 | | | |

Presetting:

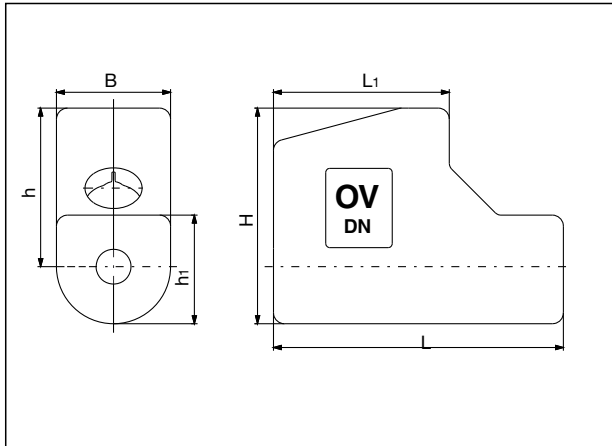
1. The value of presetting of the valve is set by turning the handwheel.
 - a. The display of the basic setting is shown by the longitudinal scale together with the sliding indicator. Each turn of the handwheel is represented by a line on the longitudinal scale.
 - b. The display of the fine setting is shown by the peripheral scale on the handwheel together with the marking. The subdivisions of the peripheral scale correspond to 1/10th of a turn of the handwheel.
2. Limitation of the set value of presetting by turning the inner adjustment stem clockwise until it seats. This can be done by using the long end of a 3 mm Allen key.

Marking of the flow and return pipe:

Clip one of the colour rings (red = supply, blue = return) supplied with each valve onto the handwheel.



Insulation shells:



Size:

| Size | Item no. |
|-------|-----------|
| DN 10 | 106 00 81 |
| DN 15 | 106 00 81 |
| DN 20 | 106 00 82 |
| DN 25 | 106 00 83 |
| DN 32 | 106 00 84 |
| DN 40 | 106 00 85 |
| DN 50 | 106 00 86 |

Dimensions:

| DN | B | L | L ₁ | H | h | h ₁ |
|----|-----|-----|----------------|-----|-----|----------------|
| 15 | 72 | 183 | 111 | 136 | 100 | 69 |
| 20 | 80 | 195 | 122 | 143 | 103 | 77 |
| 25 | 88 | 243 | 141 | 151 | 107 | 85 |
| 32 | 102 | 254 | 149 | 172 | 121 | 97 |
| 40 | 109 | 250 | 152 | 185 | 131 | 105 |
| 50 | 125 | 276 | 163 | 209 | 147 | 120 |

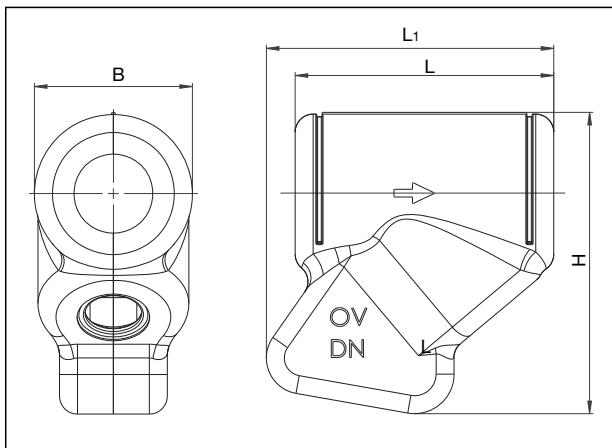
Tender specification:

Insulation shells made of polyurethane, double shells with tongue-and-groove fitting.

Only for heating systems.

Operating temperature t_s : +130°C (for short periods up to +150°C)

Insulation shells:



Size:

| Size | Item no. |
|----------|-----------|
| DN 10/15 | 106 04 81 |
| DN 20 | 106 04 82 |
| DN 25 | 106 04 83 |
| DN 32 | 106 04 84 |
| DN 40 | 106 04 85 |
| DN 50 | 106 04 86 |

Dimensions:

| DN | B | L | L ₁ | H |
|-------|-----|-----|----------------|-----|
| 10/15 | 66 | 120 | 137 | 135 |
| 20 | 74 | 126 | 140 | 142 |
| 25 | 88 | 140 | 149 | 155 |
| 32 | 88 | 144 | 160 | 168 |
| 40 | 93 | 145 | 156 | 178 |
| 50 | 110 | 188 | 179 | 202 |

Tender specification:

Insulation shells made of closed-cell foamed polyethylene with additional solid mesh effect made of polypropylene; one-piece insulation of symmetric construction with tongue-and-groove fitting.

Only for heating systems.

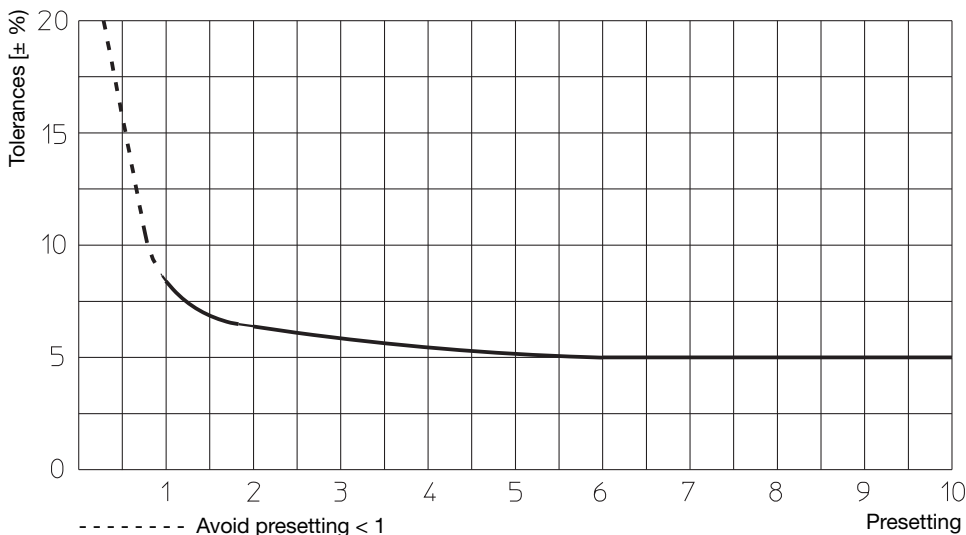
Operating temperature t_s : 100°C

Installation advice:

Oventrop double regulating and commissioning valves serve to achieve the hydronic balance between the various circuits of a system. It is therefore to be observed that the direction of flow con-

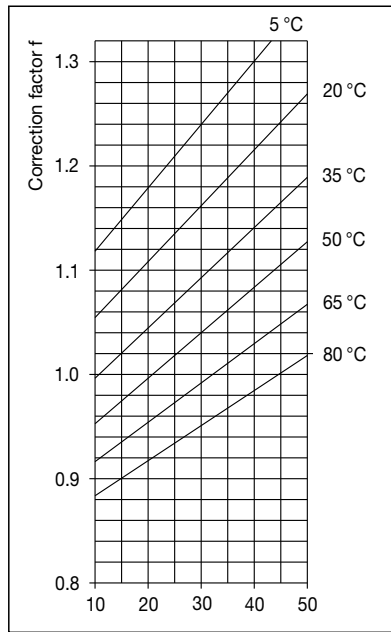
forms to the arrow on the valve body. The flow tolerance is $\pm 5\%$. If installed against the flow, an increase in the flow rate of 1-3%, related to the chart value, must be considered.

Flow tolerances depending on the presetting for 106 01/02/03/05, DN 15 - DN 50

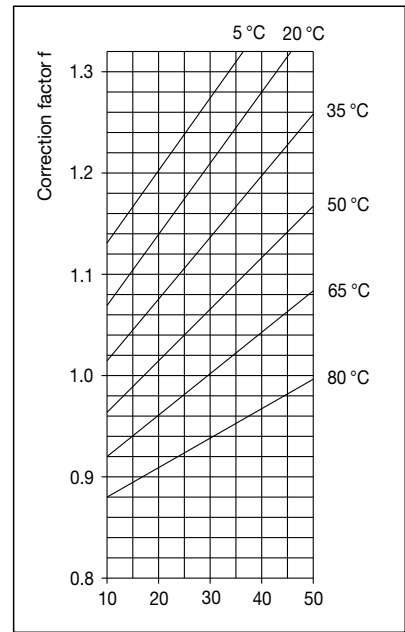


Correction factor for mixtures of water and glycol:

When antifreeze liquids are added to the heating water, the values given in the chart must be multiplied by the correction factor f.



Weight proportion of ethylene glycol [%]



Weight proportion of propylene glycol [%]

Measuring and regulation

Oventrop measuring system "OV-DMC 2" (with memory and microprocessor)

featuring numerous functions and a wide range of applications:

- low rate indication (indication m³/h, l/s, l/min. und gal/min.)
- differential pressure measuring (indication in mbar, kPa, PSI, mm WG, m WG)
- temperature measuring (indication in °C or °F)
- presetting: Arriving at the presetting value based on the measured differential pressure, the given flow rate and the valve size.

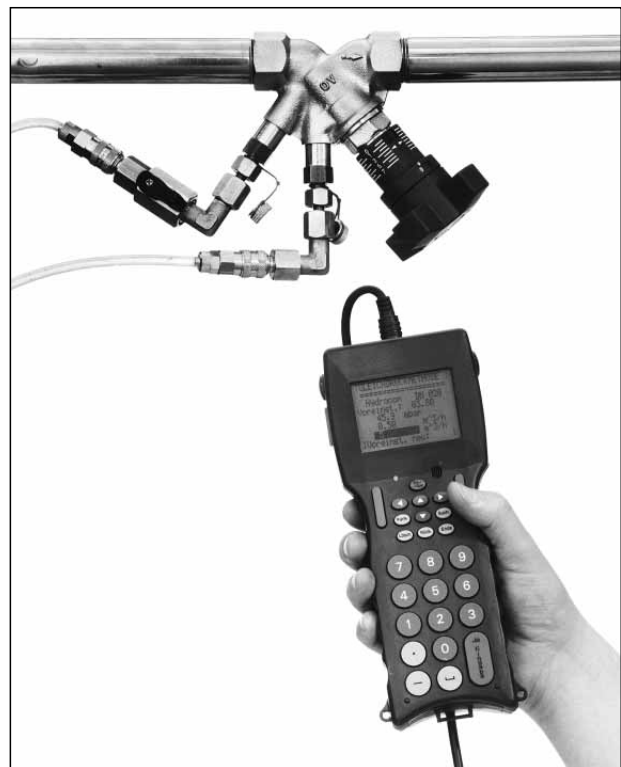
The characteristic lines of all Oventrop regulating valves are memorised in the flow-meter.

With the use of a respective k_v value, it is possible to carry out measurements on valves of other manufacturers.

(For practical use of the "OV-DMC 2", special operating instructions are available.)

Oventrop measuring system "OV-DMPC"

consisting of differential pressure transmitter "DMPC-sensor" with USB interface and software including accessories. The measuring system is connected to a commercial computer (not included).



Flow-meter "OV-DMC 2", item no. 106 91 77 with "Hydrocontrol VTR"

Subject to technical modification without notice.

Product group 3
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