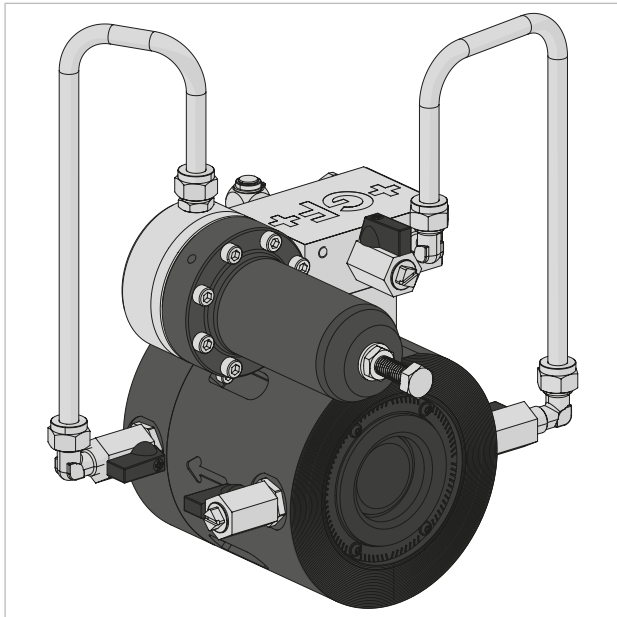


# NeoFlow Pressure Reducing Valve

DN50-DN300 / 2"-12"



NeoFlow  
Pressure Reducing Valve

## Product description

The pilot-operated NeoFlow pressure reducing valve from GF Piping Systems was conceived for the automatic pressure and flow control in networks for the supply and distribution of water.

The NeoFlow pressure reducing valve is designed to fit between standard PN10 / PN16 in a wafer-type arrangement. ANSI 150 flange compatibility is also available.

**No actuator stem or diaphragm:** Significantly reduced complexity. Low maintenance requirements due to very simple design with few components and no elastomer diaphragm.

**Axial flow:** More accurate and very stable flow (down to zero), even at a small operating differential. Higher flow precision, also enabling pressure management in low pressure systems.

**Smart valve:** Integrated pilot valve to optimize pressure regulation and optional integrated equipment to monitor flow, and water quality.

**9x lighter** than a standard metal PRV.

**5x more compact** than a standard metal PRV.

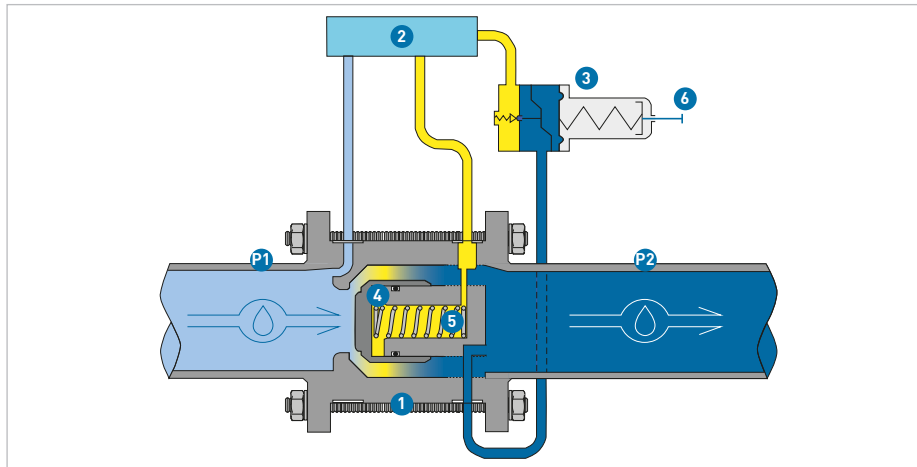
**40% less time to install** than a standard metal PRV.

### Applications

- Drinking water

## Technical basics

### Mode of operation



- 1 Main Body
- 2 Control block
- 3 Pilot valve
- 4 Piston valve
- 5 Control space
- 6 Adjusting screw
- P1 Inlet pressure
- P2 Adjustable outlet pressure

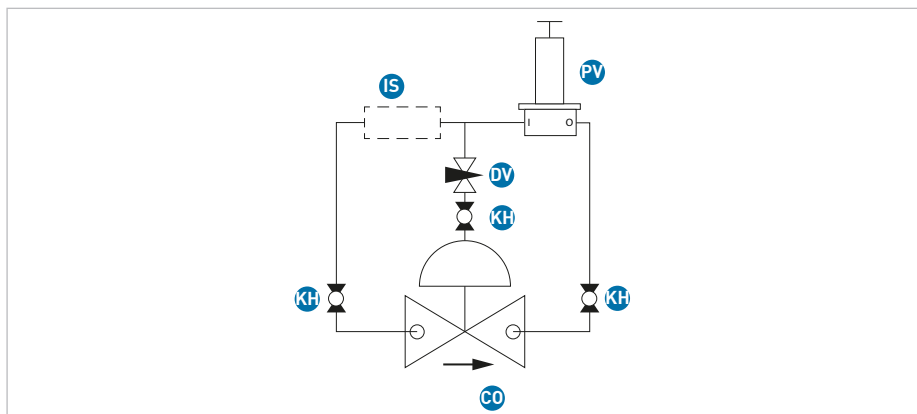
The axial movement of the piston valve (4) in the main body (1) results in flow changes in the NeoFlow pressure reducing valve and thus regulates the existing outlet pressure (P2). The position of the piston valve (4) is regulated by the prevalent pressure of the control area (5).

Turning the adjusting bolt (6) on the pilot valve (3) sets the desired outlet pressure (P2).

Depending on the existing outlet pressure (P2), the media flow in the pilot valve is changed (3).

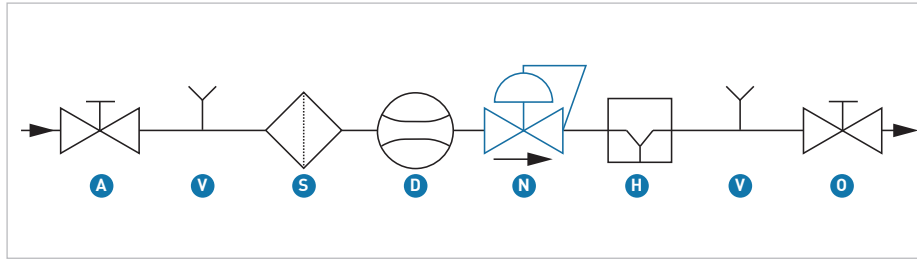
A change of the medium flow results in the adjustment of the pressure in the control area (5) via the control block (2). To equalize the pressure, the piston valve (4) moves axially in the main body (1).

### Block wiring diagram



- PV Pilot valve
- IS Control block with integrated strainer
- KH Ball valve
- DV Damping valve
- CO Controller

### Arrangement of the fittings



- A Shut-off valve inlet
- S Strainer
- D Flow measurement device
- N NeoFlow pressure reducing valve
- H Hydrant/splitter (recommended)
- O Shut-off valve, outlet
- V Air valve (recommended)

**i** In order to prevent and, if necessary, remove air from the system, it is recommended that two air relief valves are installed in the system. The best position is between the inlet valve and the strainer and between the hydrant/branch and the outlet valve or at the highest point of the installation line.

**i** Installation and maintenance must be carried out in accordance with the corresponding installation instructions. To be found under [www.gfps.com/neoflow-manual](http://www.gfps.com/neoflow-manual) or under [www.gfps.com](http://www.gfps.com)

### Reference values for screw fastening

DN50 – DN300 in ISO-flange connections DIN 2501 / EN 1092 - PN16

| DN<br>(mm) | Do2<br>(mm) | Inch<br>(") | Holes | Bolt metric | Minimum Bolt length (mm)*    |                                  | Tightening torque**<br>(Nm) |
|------------|-------------|-------------|-------|-------------|------------------------------|----------------------------------|-----------------------------|
|            |             |             |       |             | Metal Flange to Metal Flange | Plastic Flange to Plastic Flange |                             |
| 50         | 63          | 2           | 4     | M16         | 200                          | 230                              | 25                          |
| 80         | 90          | 3           | 8     | M16         | 230                          | 260                              | 25                          |
| 100        | 110         | 4           | 8     | M16         | 250                          | 290                              | 30                          |
| 150        | 160         | 6           | 8     | M20         | 365                          | 415                              | 40                          |
| 200        | 225         | 8           | 12    | M20         | 420                          | 490                              | 50                          |
| 250        | 280         | 10          | 12    | M24         | 480                          | 535                              | 80                          |
| 300        | 315         | 12          | 12    | M24         | 540                          | 595                              | 80                          |

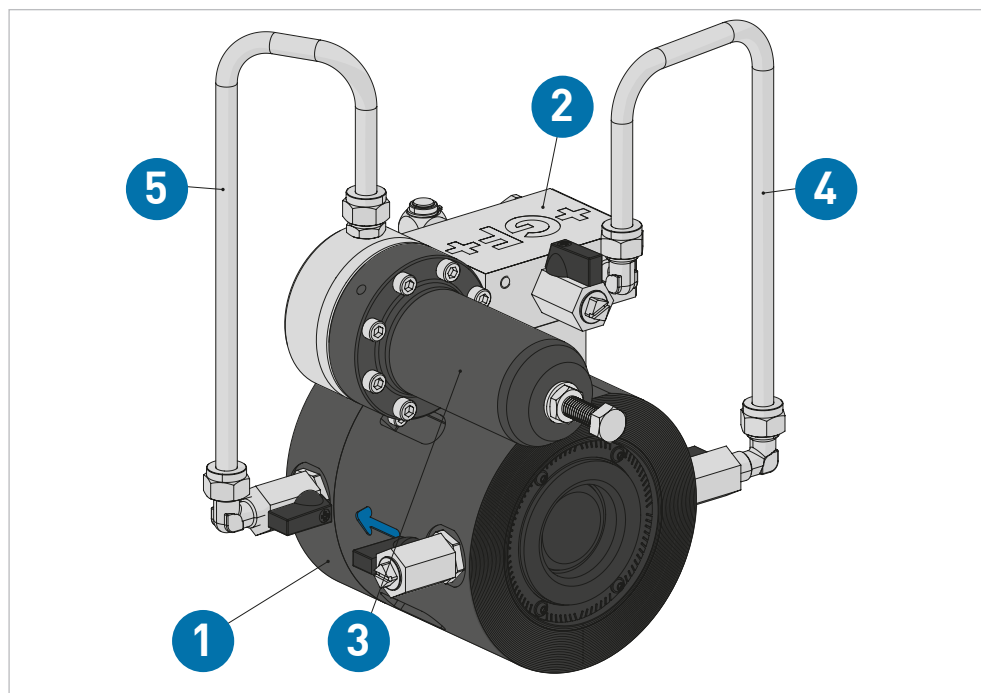
\*The screw length is dependently from the used material, please contact your GFPS expert for detailed information concerning your application. It is recommended to use stainless steel bolts, washers, and nuts.

\*\*This torque information is just a reference, the tightening force depends on the materials and specific installation components that are used.

**i** Components and tightening torques can be determined using the online tool "Perfect Flange Connection Tool" under the following link: <https://www.gfps.com/perfectflangeconnection>

## Technical data

### Specifications



- 1 Main Body
- 2 Control block
- 3 Pilot valve
- 4 Inlet control line
- 5 Outlet control line

### Specifications

|                                        |                                        |                                    |
|----------------------------------------|----------------------------------------|------------------------------------|
| <b>Dimensions</b>                      | d63/DN50 – d315/DN300, 2" – 12"        |                                    |
| <b>Materials</b>                       | Housing                                | POM-C                              |
|                                        | Piston                                 | POM-C                              |
|                                        | Elastomers                             | EPDM                               |
|                                        | Fittings                               | Stainless steel                    |
|                                        | Pilot control                          | Stainless steel, POM-C, EPDM       |
| <b>Pressure ratings</b>                | Maximum inlet pressure P1              | 16 bar / 232.1 psi*                |
|                                        | Maximum outlet pressure P2             | 16 bar / 232.1 psi**               |
|                                        | Outlet pressure range                  | 0,1 to 16 bar / 1.5 to 232.1 psi** |
|                                        | Minimal pressure difference P1– P2     | 0,2 bar / 2.9 psi***               |
| <b>Flanges</b>                         | Metric: PN10/16                        |                                    |
|                                        | Imperial: ANSI 150                     |                                    |
| <b>Valve actuation</b>                 | Pilot actuated; mechanical pilot valve |                                    |
| <b>Classification acc. to ISO 1043</b> | POM                                    |                                    |
| <b>Standards</b>                       | EN1074-1                               |                                    |
|                                        | EN1074-5                               |                                    |
|                                        | EN12266-1 class A                      |                                    |

\*With medium temperature ≤ 20°C; >20°C on request

\*\*Depending on the pilot valve type

\*\*\*Depending on flow and size

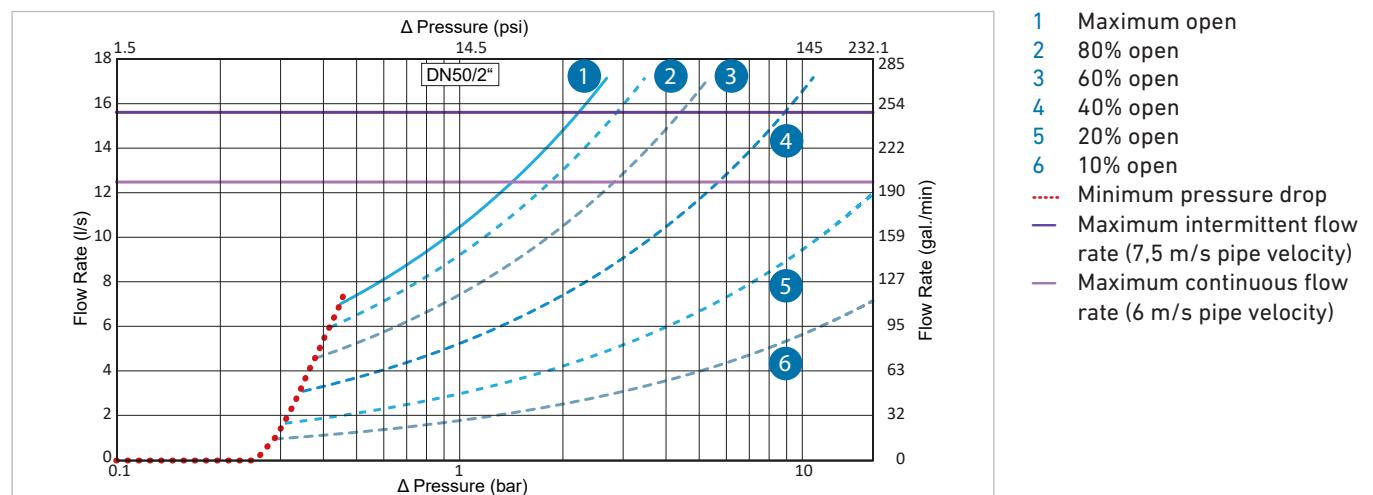
## Flow characteristics

### Kv 100-values

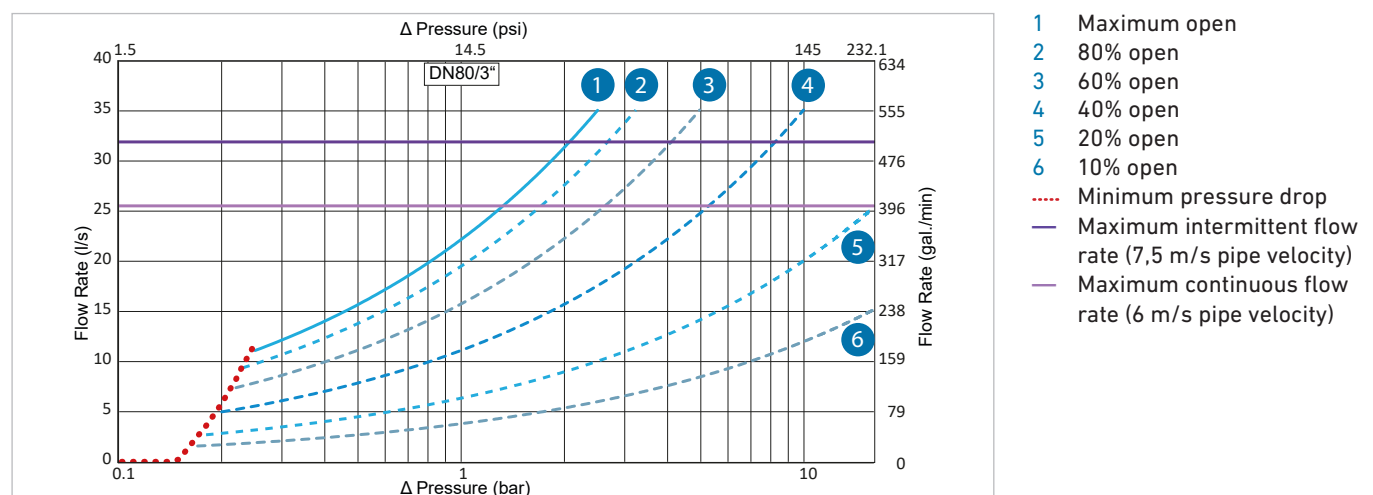
| DN<br>(mm) | Do2<br>(mm) | Inch<br>(") | Kv 100<br>(l/min) | Kv 100<br>(m³/h) | Cv 100<br>(US gal./min) |
|------------|-------------|-------------|-------------------|------------------|-------------------------|
| 50         | 63          | 2           | 633               | 38               | 44                      |
| 80         | 90          | 3           | 1333              | 80               | 93                      |
| 100        | 110         | 4           | 2383              | 143              | 165                     |
| 150        | 160         | 6           | 5317              | 319              | 369                     |
| 200        | 225         | 8           | 9417              | 565              | 653                     |
| 250        | 280         | 10          | 12883             | 773              | 894                     |
| 300        | 315         | 12          | 16733             | 1004             | 1161                    |

## Pressure loss charts

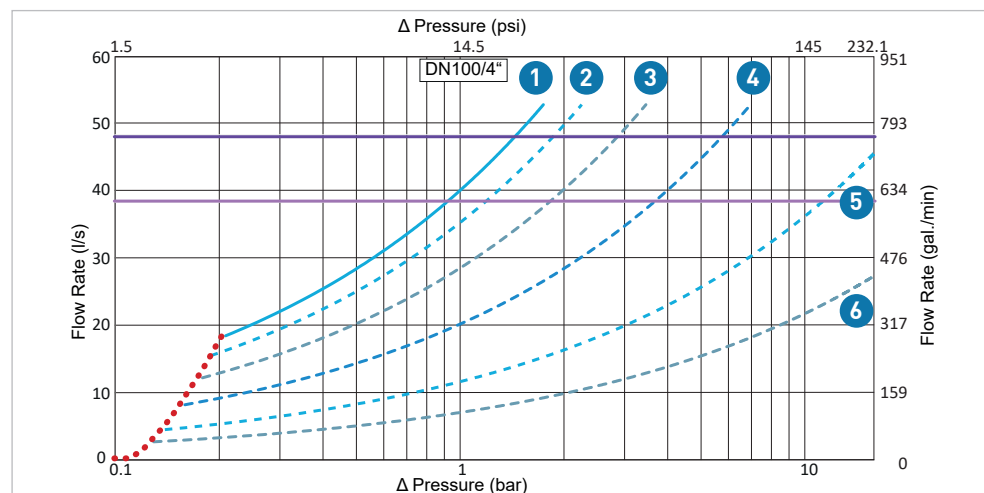
### Pressure loss DN50/2"



### Pressure loss DN80/3"

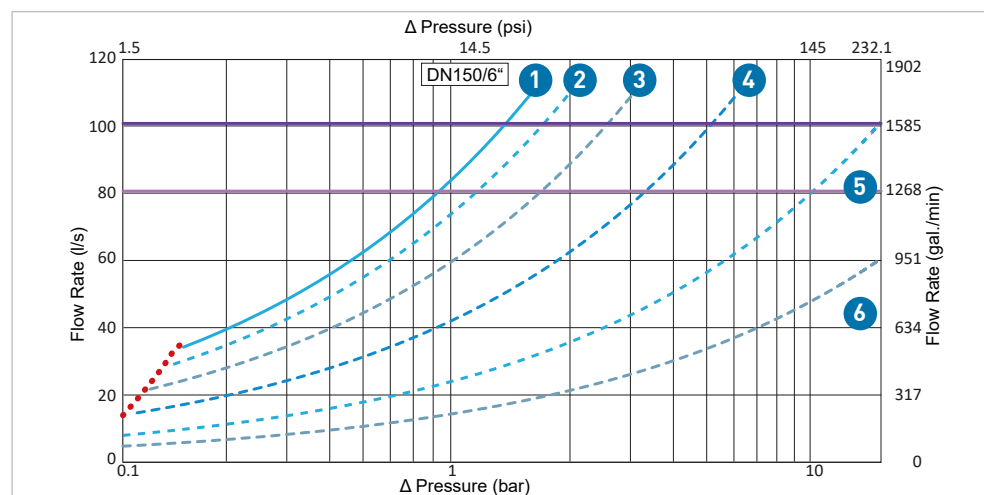


Pressure loss DN100/4"



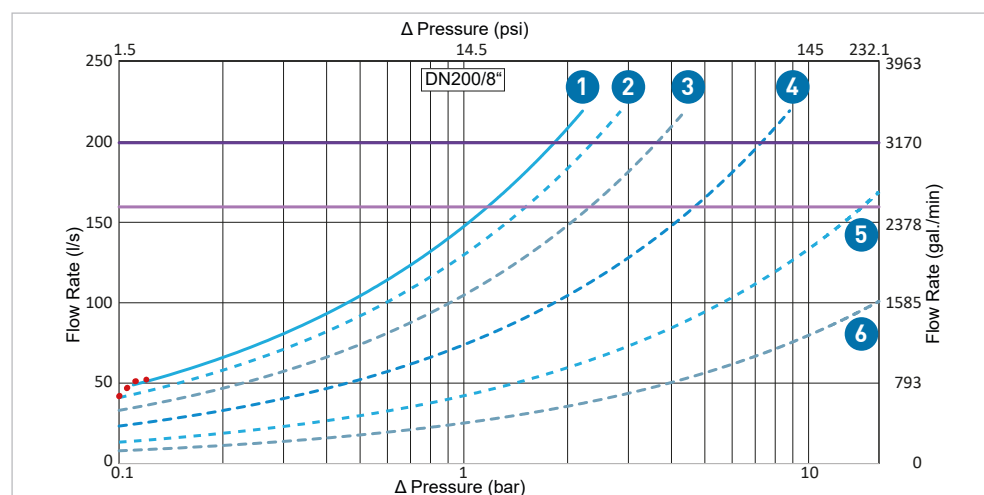
- 1 Maximum open
- 2 80% open
- 3 60% open
- 4 40% open
- 5 20% open
- 6 10% open
- ..... Minimum pressure drop
- Maximum intermittent flow rate (7,5 m/s pipe velocity)
- Maximum continuous flow rate (6 m/s pipe velocity)

Pressure loss DN150/6"



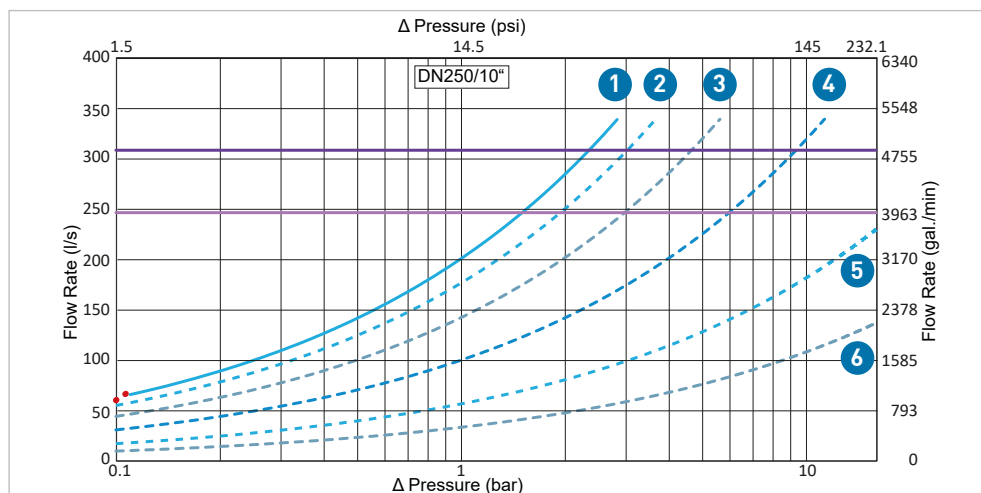
- 1 Maximum open
- 2 80% open
- 3 60% open
- 4 40% open
- 5 20% open
- 6 10% open
- ..... Minimum pressure drop
- Maximum intermittent flow rate (7,5 m/s pipe velocity)
- Maximum continuous flow rate (6 m/s pipe velocity)

Pressure loss DN200/8"



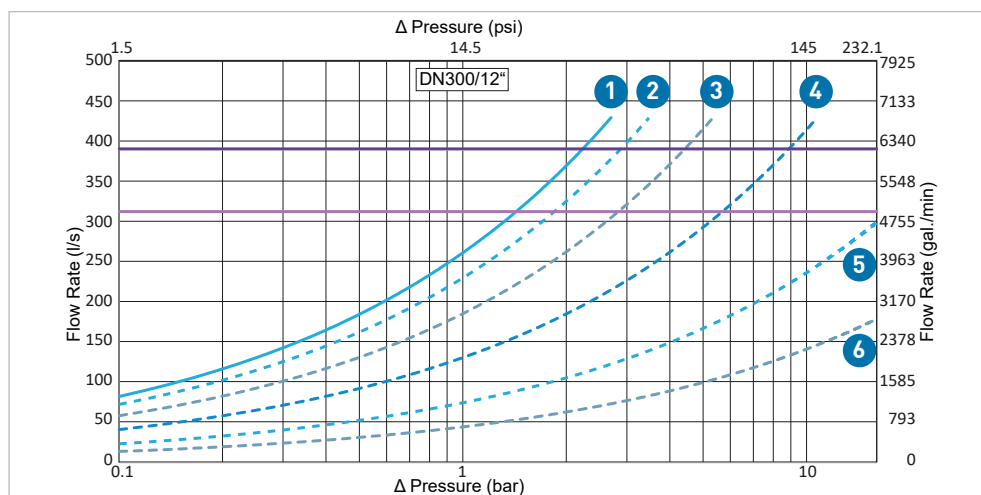
- 1 Maximum open
- 2 80% open
- 3 60% open
- 4 40% open
- 5 20% open
- 6 10% open
- ..... Minimum pressure drop
- Maximum intermittent flow rate (7,5 m/s pipe velocity)
- Maximum continuous flow rate (6 m/s pipe velocity)

## Pressure loss DN250/10"



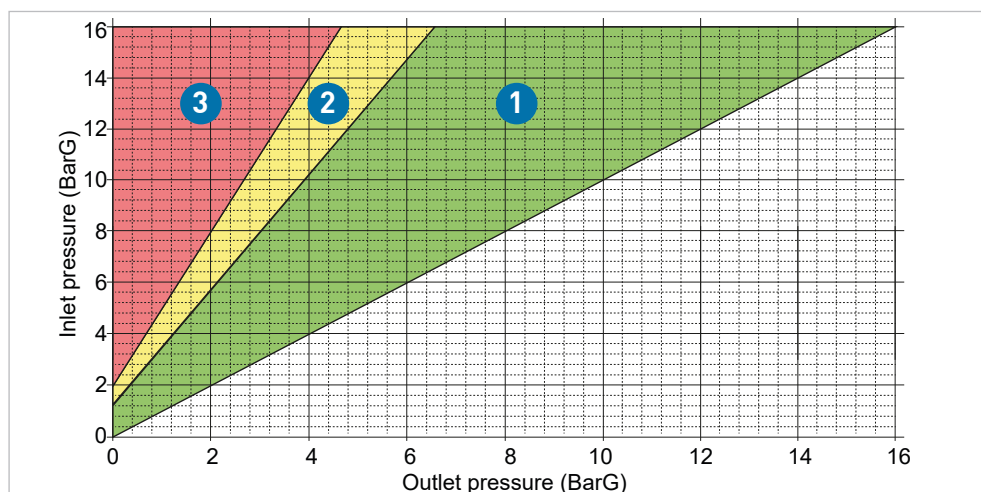
- 1 Maximum open
- 2 80% open
- 3 60% open
- 4 40% open
- 5 20% open
- 6 10% open
- ..... Minimum pressure drop
- Maximum intermittent flow rate (7,5 m/s pipe velocity)
- Maximum continuous flow rate (6 m/s pipe velocity)

## Pressure loss DN300/12"



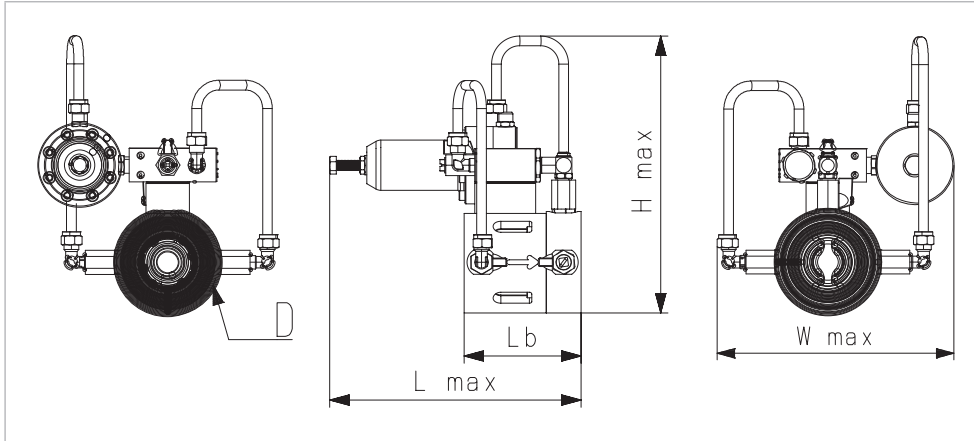
- 1 Maximum open
- 2 80% open
- 3 60% open
- 4 40% open
- 5 20% open
- 6 10% open
- ..... Minimum pressure drop
- Maximum intermittent flow rate (7,5 m/s pipe velocity)
- Maximum continuous flow rate (6 m/s pipe velocity)

## Cavitation



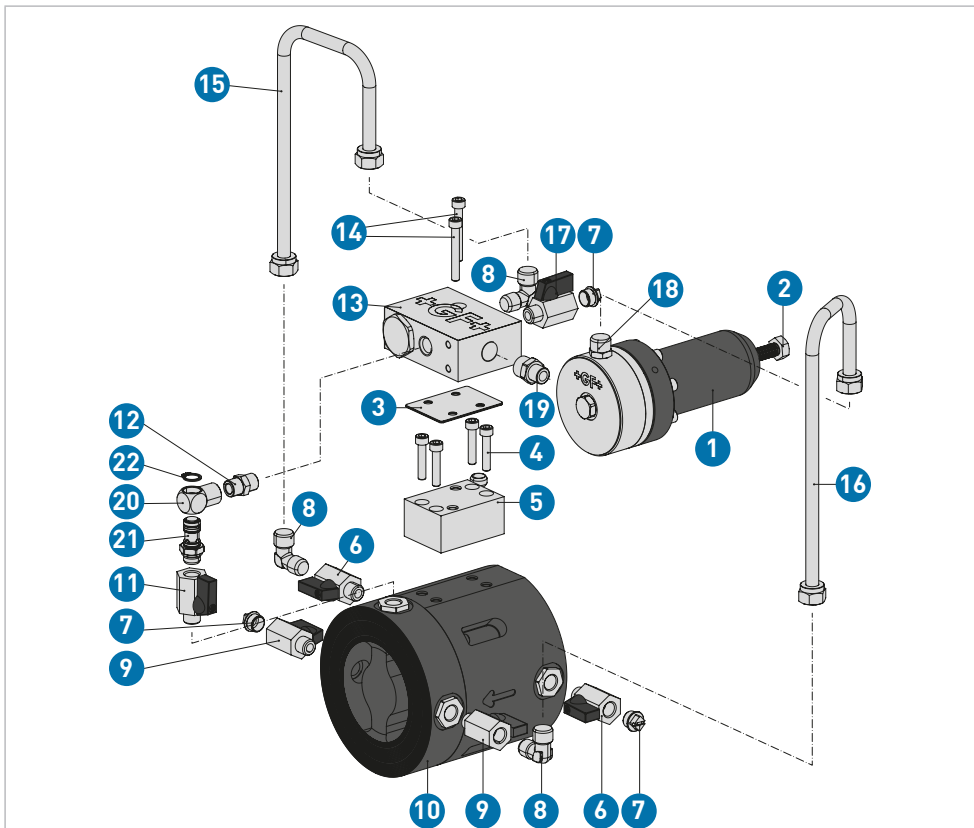
- 1 Safe operating region
- 2 Cavitation noise region
- 3 Cavitation damage region

## Dimensions



| Dimensions |             |             | Housing dimensions |               |            |               |               | NPT<br>Housing dimensions |                 |                 |
|------------|-------------|-------------|--------------------|---------------|------------|---------------|---------------|---------------------------|-----------------|-----------------|
| DN<br>(mm) | Do2<br>(mm) | Inch<br>(") | D<br>(mm)          | L max<br>(mm) | Lb<br>(mm) | H max<br>(mm) | W max<br>(mm) | Weight<br>(kg)            | H max<br>(inch) | W max<br>(inch) |
| 50         | 63          | 2           | 105                | 266           | 121        | 283           | 240           | 5.2                       | 12              | 10              |
| 80         | 90          | 3           | 134                | 289           | 135        | 318           | 253           | 6.1                       | 13              | 11              |
| 100        | 110         | 4           | 162                | 287           | 155        | 337           | 274           | 7.6                       | 14              | 11              |
| 150        | 160         | 6           | 218                | 289           | 230        | 385           | 340           | 12.7                      | 16              | 14              |
| 200        | 225         | 8           | 275                | 298           | 298        | 406           | 485           | 22.3                      | 18              | 21              |
| 250        | 280         | 10          | 328                | 348           | 348        | 510           | 550           | 34.8                      | 20              | 24              |
| 300        | 315         | 12          | 378                | 398           | 398        | 596           | 640           | 51.0                      | 22              | 25              |

## Components



- 1 Pilot valve
- 2 Adjusting screw
- 3 Spacer plate
- 4 Socket head bolt M6x25
- 5 Control block base
- 6 Ball valve inlet
- 7 Sealing plug
- 8 90° Bolt connection
- 9 Ball valve outlet
- 10 Main body
- 11 Ball valve control space
- 12 Valve chamber transition nipple
- 13 Control block
- 14 Control block bolt connection
- 15 Inlet control line
- 16 Outlet control line
- 17 Ball valve control block
- 18 Screw-in connection, straight
- 19 Pilot transition nipple
- 20 Damping valve sleeve
- 21 Damping valve
- 22 Clamp ring

## Article numbers

### BSP version

| DN (mm) | Code 0 - 3 (bar [g]) | Code 1 - 8* (bar [g]) | Code 1 - 13.5 (bar [g]) | Code 1 - 16 (bar [g]) |
|---------|----------------------|-----------------------|-------------------------|-----------------------|
| 50      | 193 175 111          | 193 175 011           |                         | 193 175 211           |
| 80      | 193 175 113          | 193 175 013           |                         | 193 175 213           |
| 100     | 193 175 114          | 193 175 014           |                         | 193 175 214           |
| 150     | 193 175 117          | 193 175 017           |                         | 193 175 217           |
| 200     |                      | 193 173 020           | 193 173 420             | 193 173 620           |
| 250     |                      | 193 173 022           | 193 173 422             | 193 173 622           |
| 300     |                      | 193 173 023           | 193 173 423             | 193 173 623           |

\* 0 - 8.5 bar for DN200 - DN300

### NPT version

| Inch (") | Code 0 - 43.5 (psi [g]) | Code 14.5 - 116* (psi [g]) | Code 14.5 - 195 (psi [g]) | Code 14.5 - 232 (psi [g]) |
|----------|-------------------------|----------------------------|---------------------------|---------------------------|
| 2        | 193 174 811             | 193 174 711                |                           | 193 174 911               |
| 3        | 193 174 812             | 193 174 713                |                           | 193 174 913               |
| 4        | 193 174 812             | 193 174 714                |                           | 193 174 914               |
| 6        | 193 174 817             | 193 174 717                |                           | 193 174 917               |
| 8        |                         | 193 174 020                | 193 174 420               | 193 174 620               |
| 10       |                         | 193 174 022                | 193 174 422               | 193 174 622               |
| 12       |                         | 193 174 023                | 193 174 423               | 193 174 623               |

\* 0 - 123 psi for 8" - 12"

### Pressure ranges of the pilot valve springs

| Color coding Pilot valve spring | Pressure range Adjustable (bar [g]) | Pressure range Adjustable (psi [g]) | Sensitivity of the setting (bar/revolution) | Sensitivity of the setting (psi/revolution) |
|---------------------------------|-------------------------------------|-------------------------------------|---------------------------------------------|---------------------------------------------|
| Silver                          | 0 - 3*                              | 0 - 43.5                            | 0.18                                        | 2.6                                         |
| Black**                         | 1 - 8                               | 14.5 - 116                          | 0.43                                        | 6.2                                         |
| Blue                            | 1 - 13.5***                         | 14.5 - 195***                       | 0.65                                        | 9.4                                         |
| Red                             | 1 - 16                              | 14.5 - 232                          | 1.53                                        | 21.8                                        |

\*DN50 - DN150 only

\*\*Standard version, 0 - 8.5 bar / 14.5 - 123 psi for DN200-DN300

\*\*\*DN200 - DN300 only

Co-developed with OFUI

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