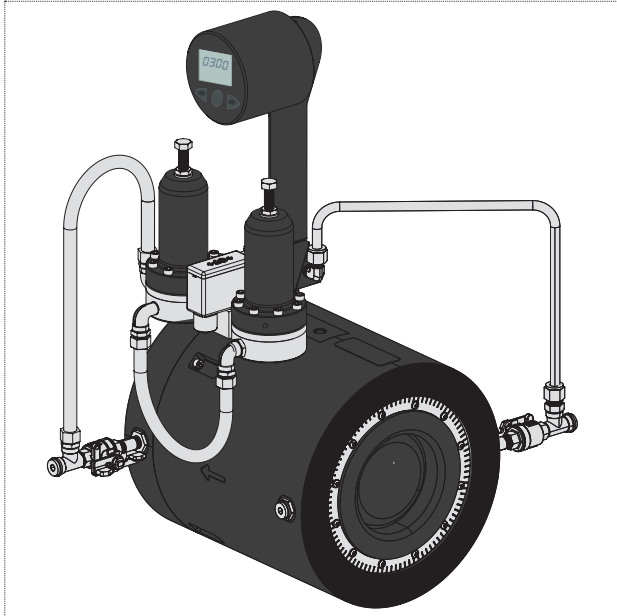


NeoFlow Dual Setpoint Pressure Reducing Valve

DN50-DN300 / 2"-12"



NeoFlow
Dual Setpoint Pressure Reducing Valve

Product description

The NeoFlow dual setpoint pressure reducing valve from GF Piping Systems is designed to deliver two distinct pressure setpoints based on a time schedule programmed by the operator. The two distinct setpoints are achieved with two pilot valves, a timer, and a solenoid valve switching between the two pilots. The unit is battery powered with a standard 9V battery that is easily replaceable.

The NeoFlow pressure reducing valve is designed to fit between standard PN10 / PN16 flanges in a wafer-type arrangement. ANSI 150 flange compatibility is also available (excl. DN80).

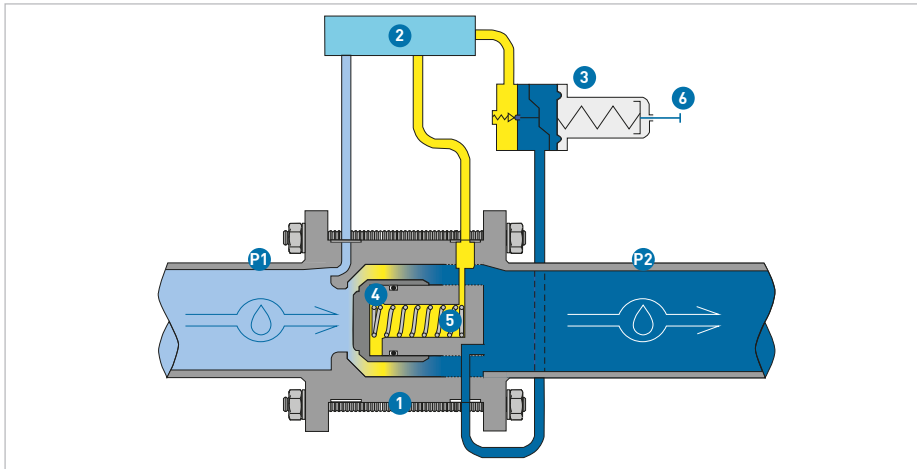
- **No actuator stem or diaphragm:** Significantly reduced complexity. Low maintenance requirements due to very simple design with few components and no elastomer diaphragm.
- **Axial flow:** More accurate and very stable flow (down to zero), even at a small operating differential. Higher flow precision, 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.
- **Up to 3 high pressure profiles a day:** able to be set from 1 min up to 23 h 59 min.
- **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.

Application

- Drinking water

Technical basics

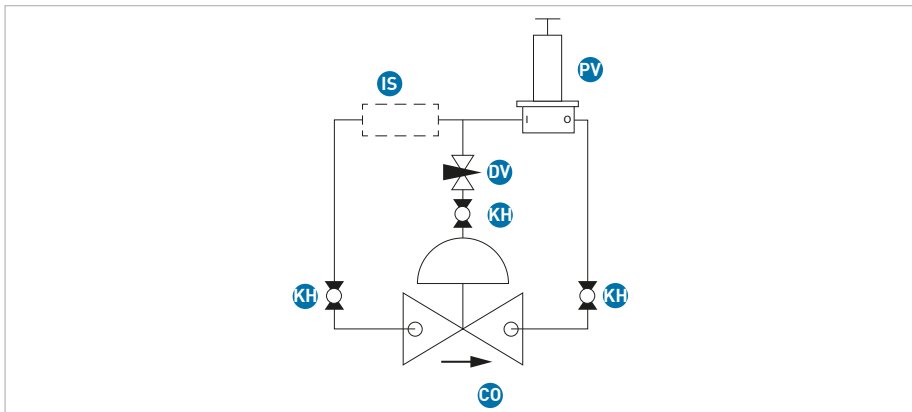
Mode of operation



- 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

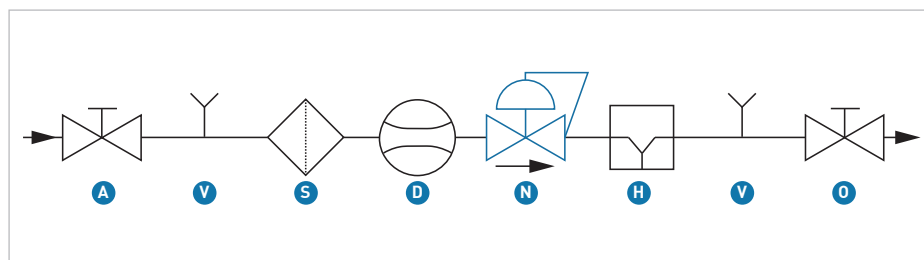
The axial movement of the piston valve (4) in the main body (1) results in flow changes in the NeoFlow pressure reducing valve and thus regulates the existing outlet pressure (P2). The position of the piston valve (4) is regulated by the prevalent pressure of the control area (5). Turning the adjusting 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 (recommended)
- O** Shut-off valve, outlet
- V** Air valve

i In order to prevent and, if necessary, remove air from the system, it is recommended that two air valves are installed in the system. The best position is between the inlet valve and the strainer and between the hydrant 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 or under www.gfps.com

Reference values for screw fastening

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

DN (mm)	Do2 (mm)	Inch (")	Holes	Bolt metric	Minimum Bolt length (mm)*		Tightening torque** (Nm)
					Metal Flange to Metal Flange	Plastic Flange to Plastic Flange	
50	63	2	4	M16	200	230	25
80	90	-	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

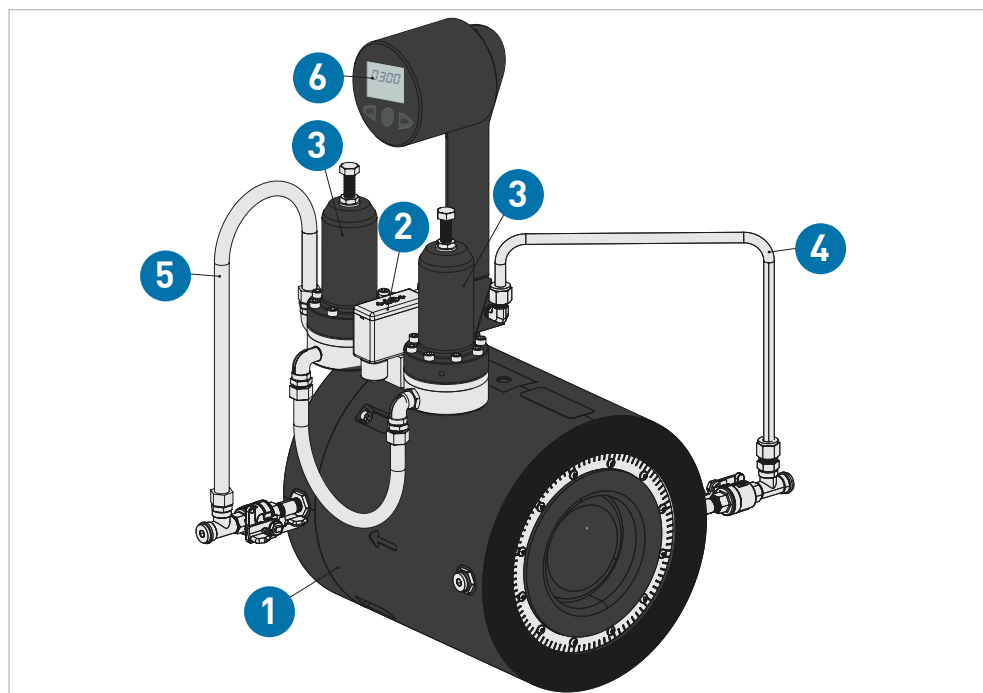
*The screw length is dependently from the used material, please contact your GFPS expert for detailed information concerning your application. It is recommended to use stainless steel bolts, washers, and nuts.

**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 Solenoid valve
- 3 Pilot valve
- 4 Inlet control line
- 5 Outlet control line
- 6 Timer

Specifications

Dimensions	d63/DN50 – d315/DN300; 2" – 12"	
Materials	Housing	POM-C
	Piston	POM-C
	Elastomers	EPDM
	Fittings	Stainless steel
	Pilot control	Stainless steel, POM-C, EPDM
	Solenoid	Brass, EPDM
Pressure ratings	Maximum inlet pressure P1	16 bar / 232.1 psi*
	Maximum outlet pressure PH	16 bar / 232.1 psi**
	Outlet pressure range	0.1 to 16 bar / 1.5 to 232.1 psi**
	Minimal pressure difference P1– PH	0.2 bar / 2.9 psi***
	Minimum pressure difference PH - PL	0.5 bar / 7.3 psi
	Maximum pressure difference PH - PL	15.0 bar / 217.6 psi
Flanges	Metric: PN10/16	
	Imperial: ANSI 150	
Valve actuation	Pilot actuated; two mechanical pilot valves IP68 9V latching bistable solenoid valve	
Timer	IP68 9V battery powered timer PA6 body Polycarbonate screen	
Classification acc. to ISO 1043	POM	
Standards	EN1074-1	
	EN1074-5	

*With medium temperature $\leq 20^{\circ}\text{C}$; $>20^{\circ}\text{C}$ on request

**Depending on the pilot valve type

***Depending on flow and size

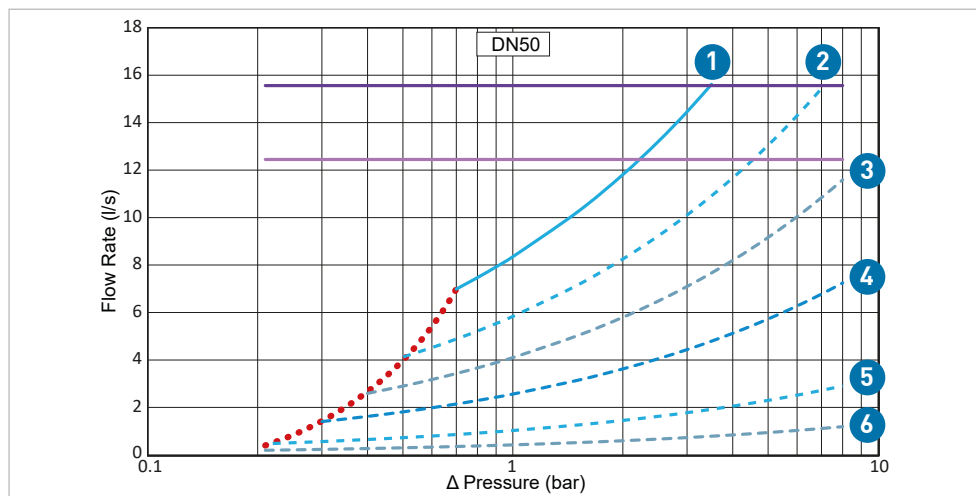
Flow characteristics

Kv 100-values

DN (mm)	Do2 (mm)	Inch (")	Kv 100 (l/min)	Kv 100 (m ³ /h)	Cv 100 (US gal./min)
50	63	2	500	30	35
80	90	-	1217	73	84
100	110	4	2167	130	150
150	160	6	4433	266	307
200	225	8	9417	565	653
250	280	10	12883	773	894
300	315	12	16733	1004	1161

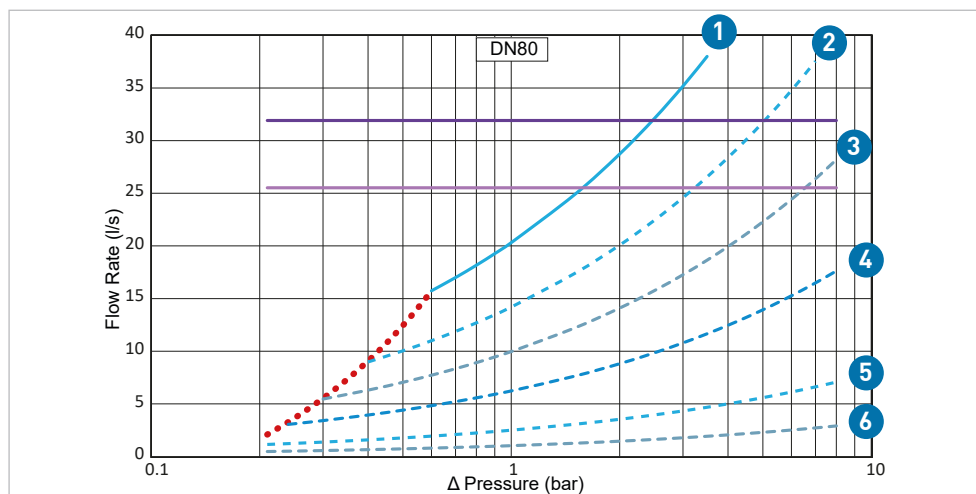
Pressure loss charts

Pressure loss DN50/2"



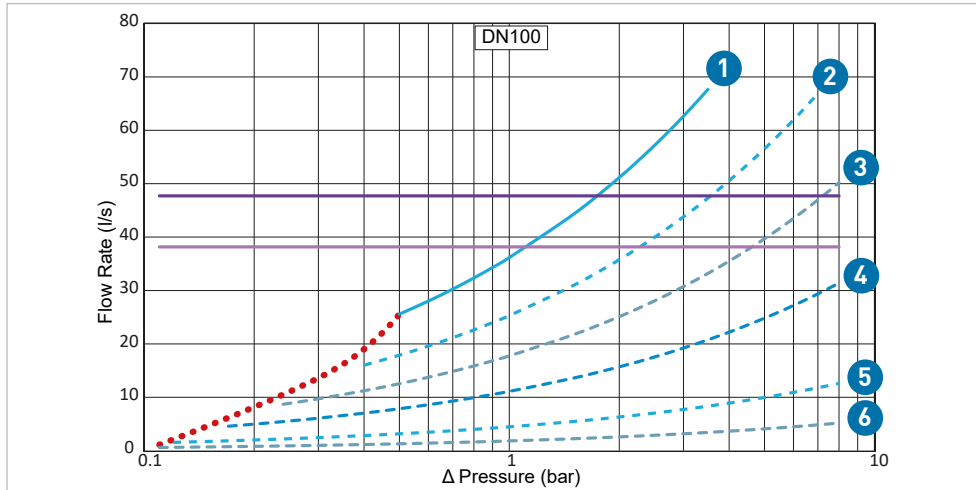
- 1 Maximum open
- 2 80% open
- 3 60% open
- 4 40% open
- 5 20% open
- 6 10% open
- Minimum pressure drop
- Maximum intermittent flow rate (7,5 m/s pipe velocity)
- Maximum continuous flow rate (6 m/s pipe velocity)

Pressure loss DN80



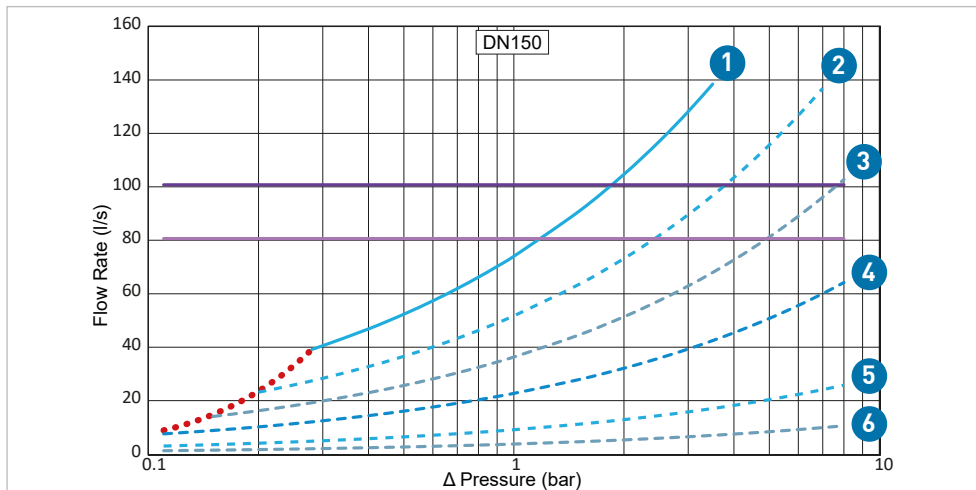
- 1 Maximum open
- 2 80% open
- 3 60% open
- 4 40% open
- 5 20% open
- 6 10% open
- Minimum pressure drop
- Maximum intermittent flow rate (7,5 m/s pipe velocity)
- Maximum continuous flow rate (6 m/s pipe velocity)

Pressure loss DN100/4"



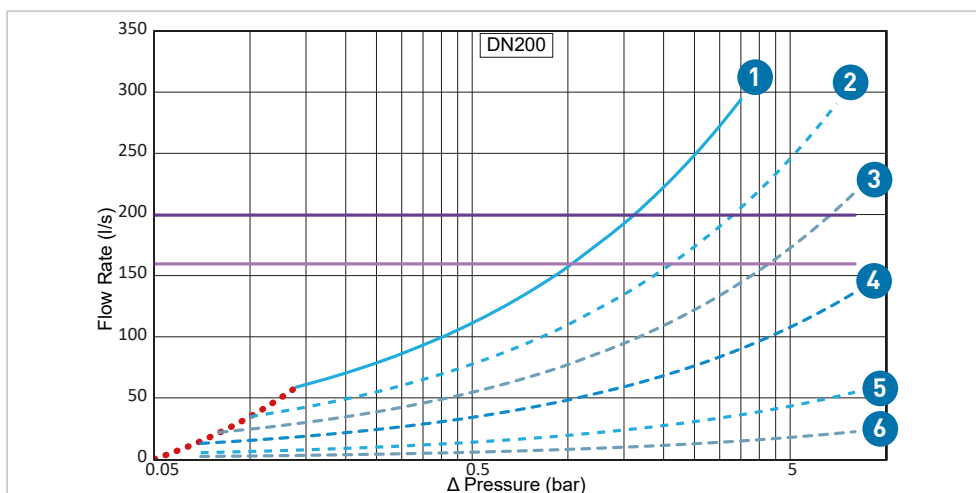
- 1 Maximum open
- 2 80% open
- 3 60% open
- 4 40% open
- 5 20% open
- 6 10% open
- Minimum pressure drop
- Maximum intermittent flow rate (7,5 m/s pipe velocity)
- Maximum continuous flow rate (6 m/s pipe velocity)

Pressure loss DN150/6"



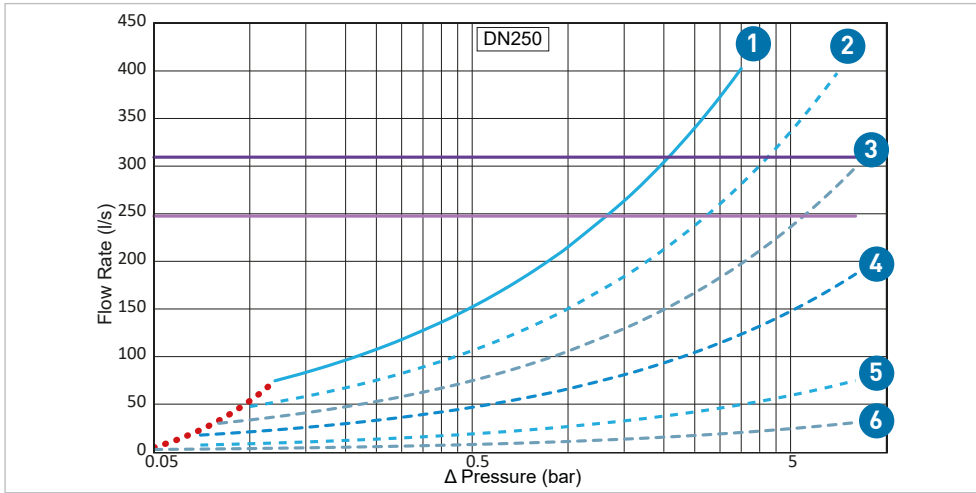
- 1 Maximum open
- 2 80% open
- 3 60% open
- 4 40% open
- 5 20% open
- 6 10% open
- Minimum pressure drop
- Maximum intermittent flow rate (7,5 m/s pipe velocity)
- Maximum continuous flow rate (6 m/s pipe velocity)

Pressure loss DN200/8"



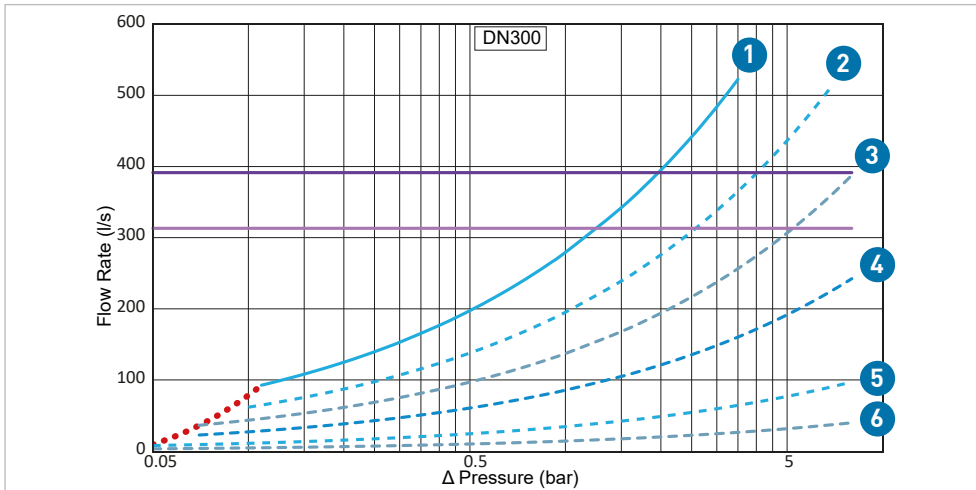
- 1 Maximum open
- 2 80% open
- 3 60% open
- 4 40% open
- 5 20% open
- 6 10% open
- Minimum pressure drop
- Maximum intermittent flow rate (7,5 m/s pipe velocity)
- Maximum continuous flow rate (6 m/s pipe velocity)

Pressure loss DN250/10"



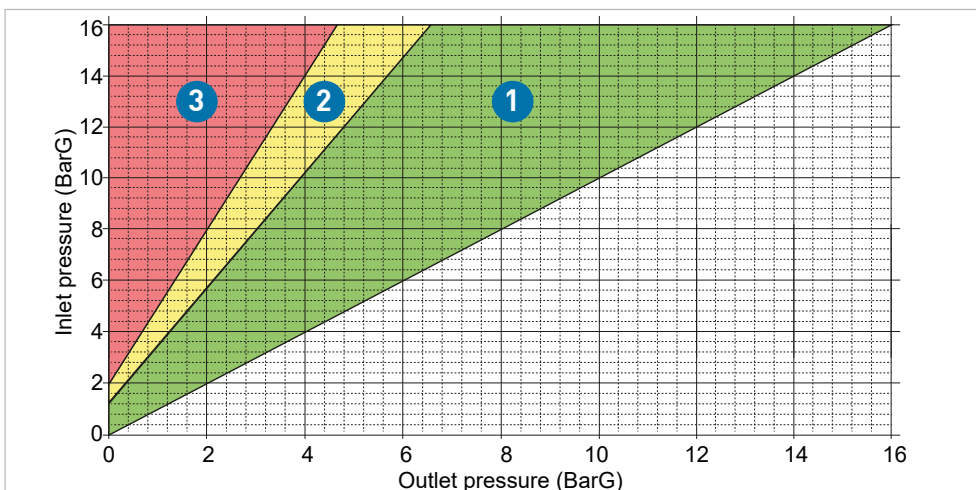
- 1 Maximum open
- 2 80% open
- 3 60% open
- 4 40% open
- 5 20% open
- 6 10% open
- Minimum pressure drop
- Maximum intermittent flow rate (7,5 m/s pipe velocity)
- Maximum continuous flow rate (6 m/s pipe velocity)

Pressure loss DN300/12"



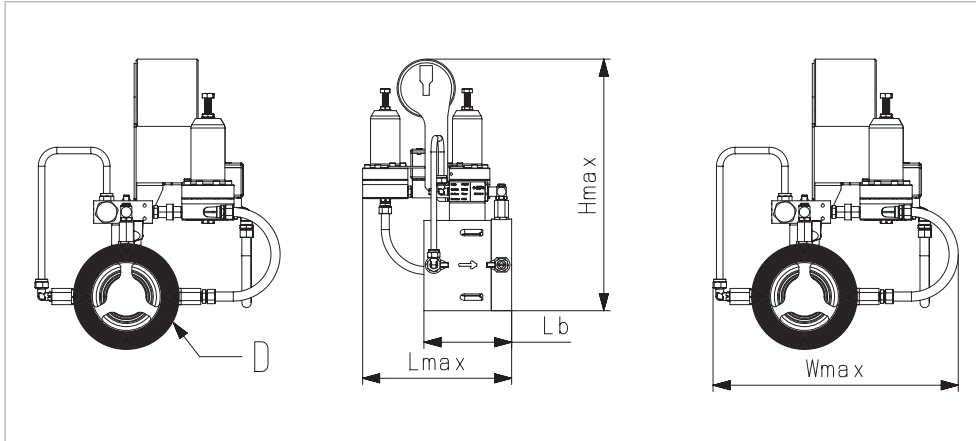
- 1 Maximum open
- 2 80% open
- 3 60% open
- 4 40% open
- 5 20% open
- 6 10% open
- Minimum pressure drop
- Maximum intermittent flow rate (7,5 m/s pipe velocity)
- Maximum continuous flow rate (6 m/s pipe velocity)

Cavitation



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

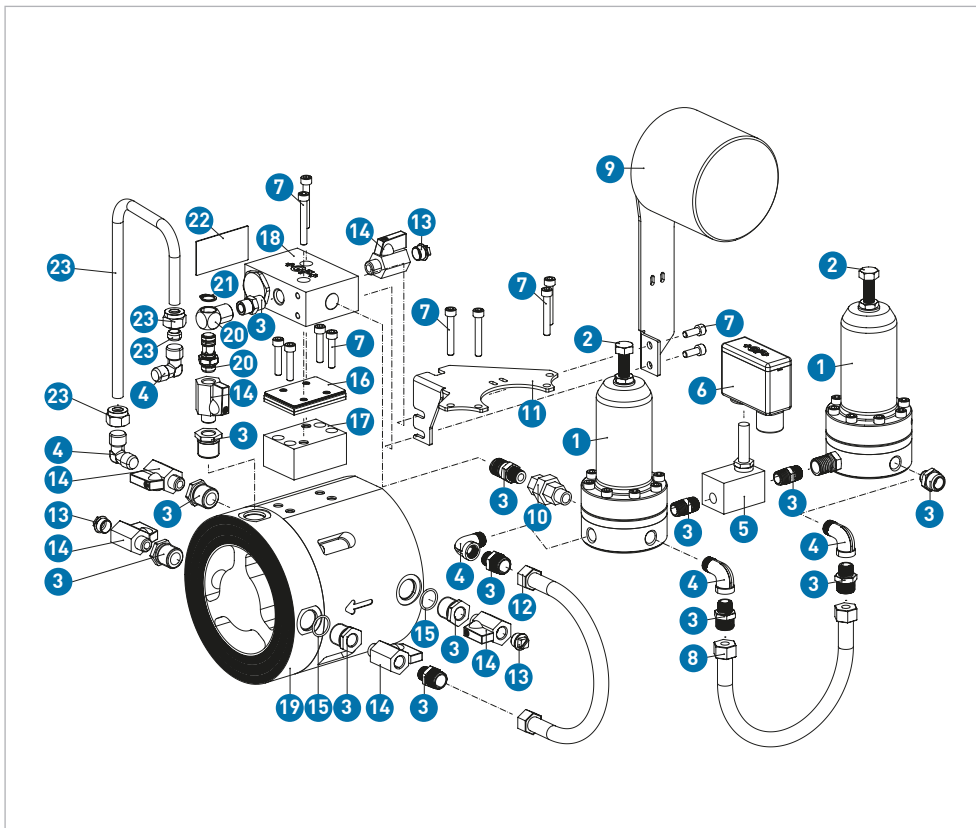
Dimensions



Dimensions			Housing dimensions					
DN (mm)	Do2 (mm)	Inch (")	D (mm)	L max (mm)	Lb (mm)	H max (mm)	W max* (mm)	Weight (kg)
50	63	2	105	271	121	387	263	8.0
80	90	-	134	271	135	418	259	9.3
100	110	4	162	271	155	445	265	10.1
150	160	6	218	271	205.5	501	265	14.0
200	225	8	275	298	298	606	513	25.6
250	280	10	328	348	348	685	568	38.1
300	315	12	378	398	398	738	621	54.3

* Flexible part. Actual width may vary.

Components



- 1 Pilot valve
- 2 Adjusting screw
- 3 Connecting nipple
- 4 90° connection fitting
- 5 Solenoid valve
- 6 Solenoid protection case
- 7 Socket head bolt
- 8 Pilot valve connecting line
- 9 Timer
- 10 Socket union
- 11 Pilot system base plate
- 12 Outlet control line
- 13 Plug
- 14 Ball valve
- 15 O-ring seal
- 16 Spacer
- 17 Control block base
- 18 Control block
- 19 Valve body
- 20 Needle valve
- 21 Retaining ring
- 22 Sticker
- 23 Inlet control line

Article numbers

BSP version

DN (mm)	Code 1 - 8* (bar [g])
50	193 173 031
80	193 173 033
100	193 173 034
150	193 173 037
200	193 173 040
250	193 173 042
300	193 173 043

* 0 - 8.5 bar for DN200 - DN300

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)
Black*	1 - 8	14.5 - 116	0.43	6.2

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



Note: Pressure ranges 0-3 bar (only DN50 - DN150), 1-13.5 bar (only DN200 - DN300), and 1-16 bar are available on request.

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