NeoFlow Pressure Reducing Valve

DN50-DN300

NeoFlow
Pressure Reducing Valve

Product description

The pilot-controlled 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. ANSI150 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.

9x lighter than a standard metal PRV.

5x more compact than a standard metal PRV.

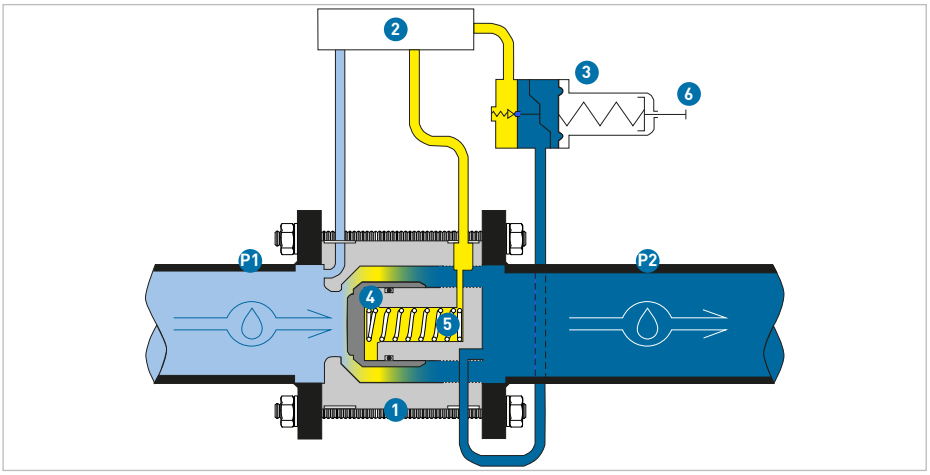
40% less time to install than a standard metal PRV.

Applications

- Drinking water

Technical basics

Mode of operation

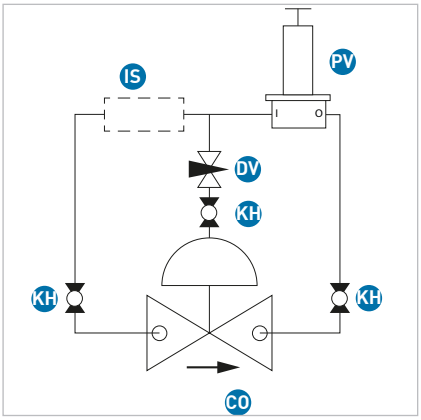


1 Main Body
2 Control block
3 Pilot valve
4 Piston valve
5 Control space
6 Adjusting screw
P1 Inlet pressure
P2 Adjustable outlet pressure

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).

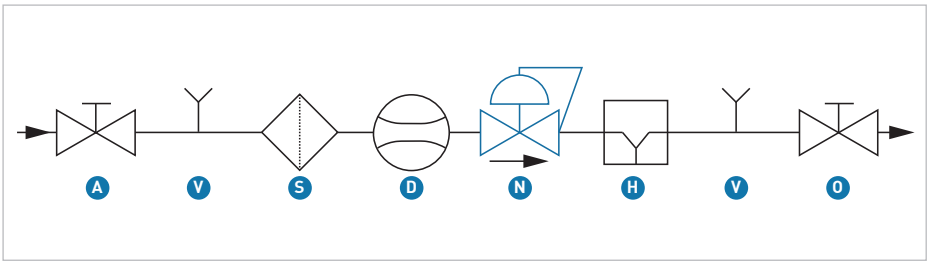
Turning the adjusting bolt (6) on the pilot valve (3) sets the desired outlet pressure (P2). Depending on the existing outlet pressure (P2), the media flow in the pilot valve is changed (3). A change of the medium flow results in the adjustment of the pressure in the control area (5) via the control 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 (receommended)

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.

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	Mininmum Bolt length (mm)*		Tightening torque**
					Metal Flange to Metal Flange	Plastic Flange to Plastic Flange	(Nm)
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	340	390	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

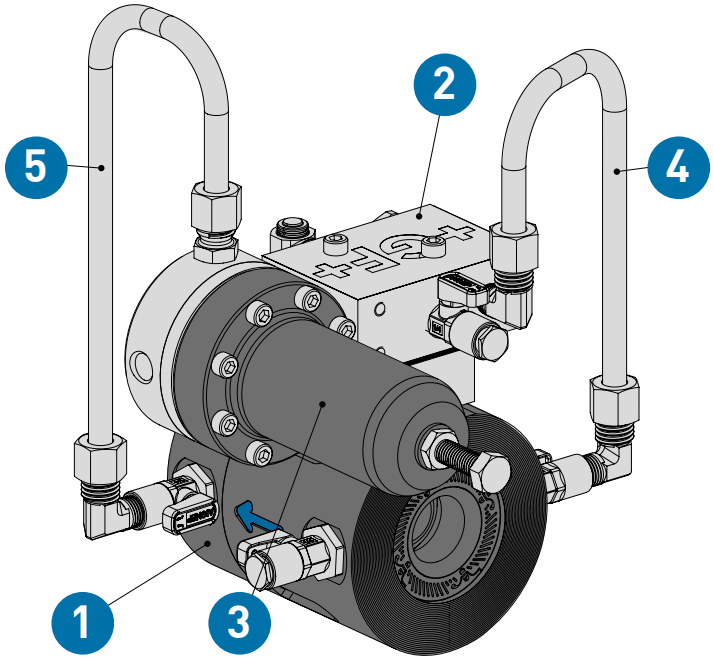
*The screw length is dependently from the used material, please contact your GFPS expert for detailed information concerning your application. It is recommended to use stainless steel bolts, washers, and nuts.

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

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

*With medium temperature ≤ 20°C; >20°C on request
**Depending on the pilot valve typ
***Depending on flow and size

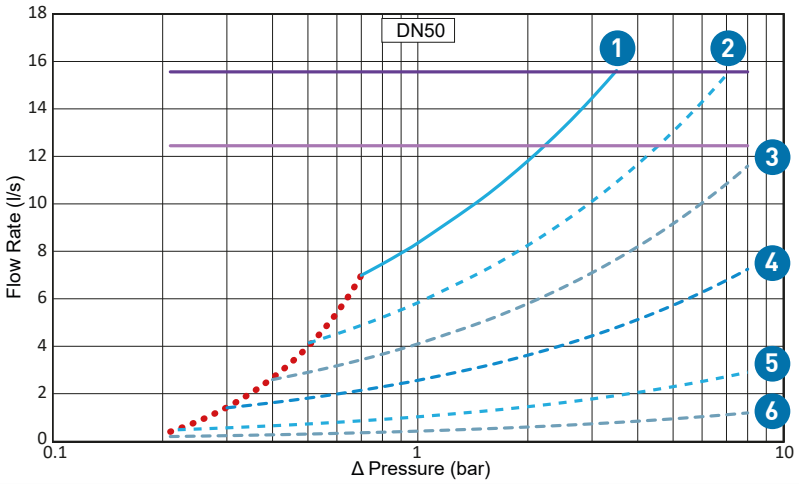
Flow characteristics

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

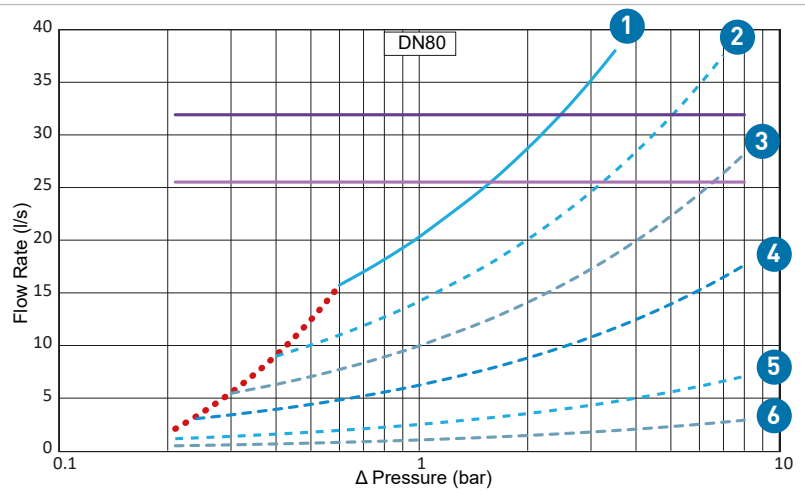
Pressure loss charts

Pressure loss DN50



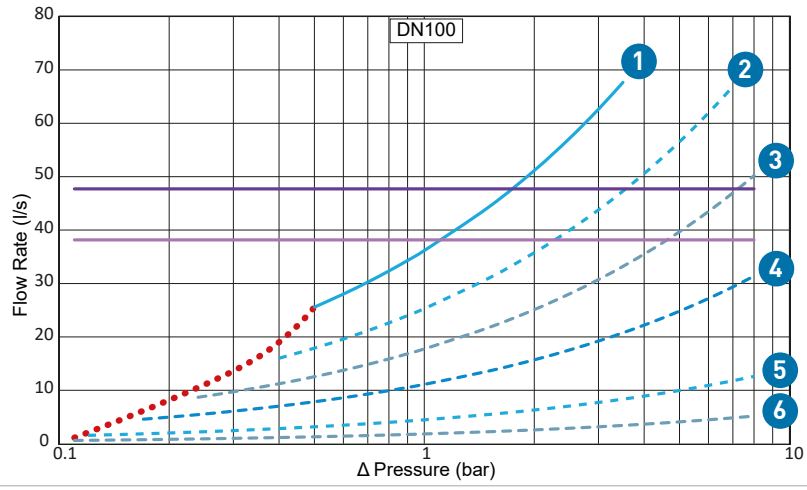
1 Maximum open
2 80% open
3 60% open
4 40% open
5 20% open
6 10% open
Minimum pressure drop
Maximum intermittent flow rate (7,5 m/s pipe velocity)
Maximum continuous flow rate (6 m/s pipe velocity)

Pressure loss DN80



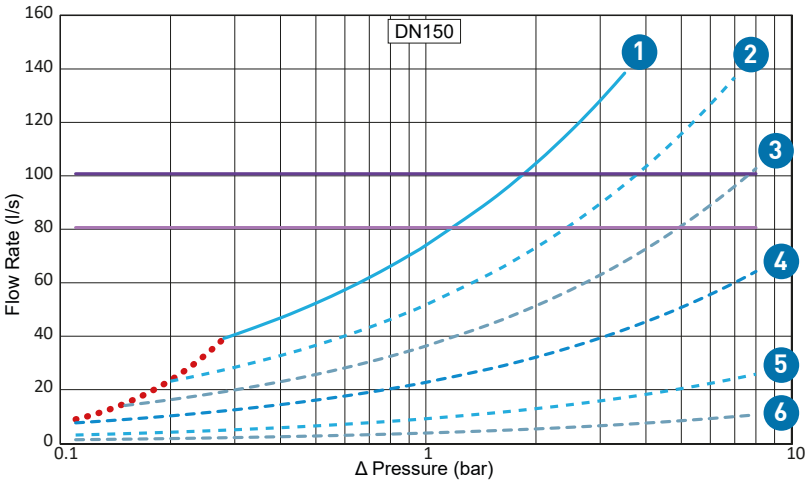
1 Maximum open
2 80% open
3 60% open
4 40% open
5 20% open
6 10% open
Minimum pressure drop
Maximum intermittent flow rate (7,5 m/s pipe velocity)
Maximum continuous flow rate (6 m/s pipe velocity)

Pressure loss DN100



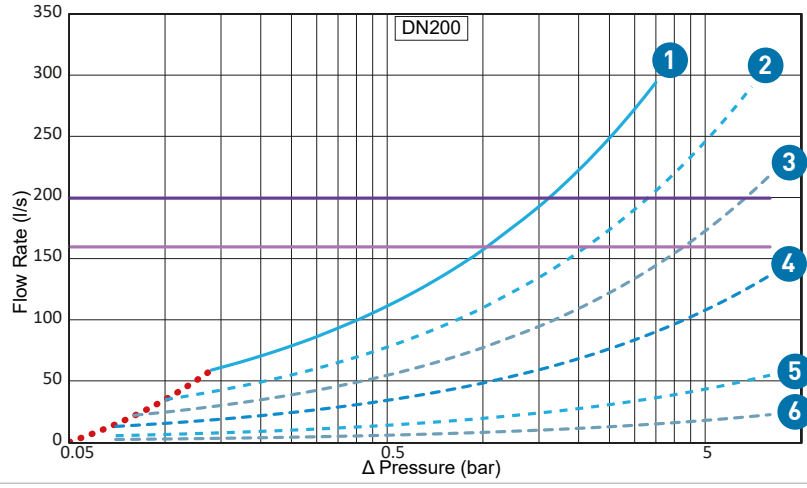
1 Maximum open
2 80% open
3 60% open
4 40% open
5 20% open
6 10% open
Minimum pressure drop
Maximum intermittent flow rate (7,5 m/s pipe velocity)
Maximum continuous flow rate (6 m/s pipe velocity)

Pressure loss DN150



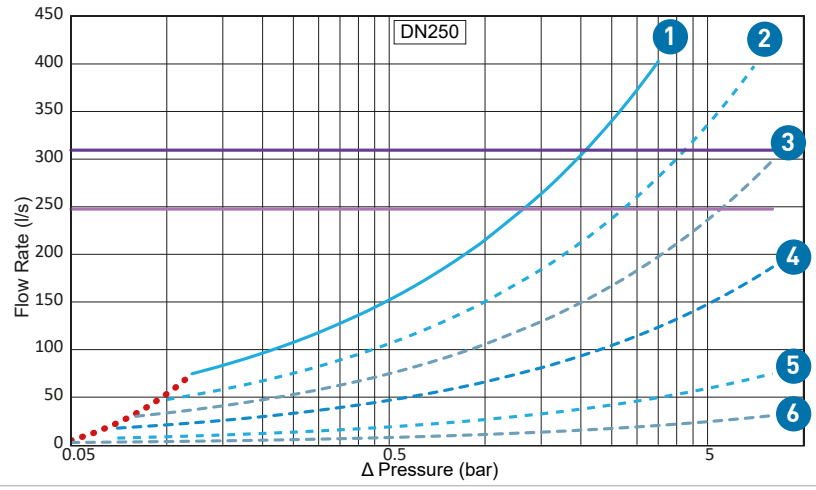
1 Maximum open
2 80% open
3 60% open
4 40% open
5 20% open
6 10% open
Minimum pressure drop
Maximum intermittent flow rate (7,5 m/s pipe velocity)
Maximum continuous flow rate (6 m/s pipe velocity)

Pressure loss DN200



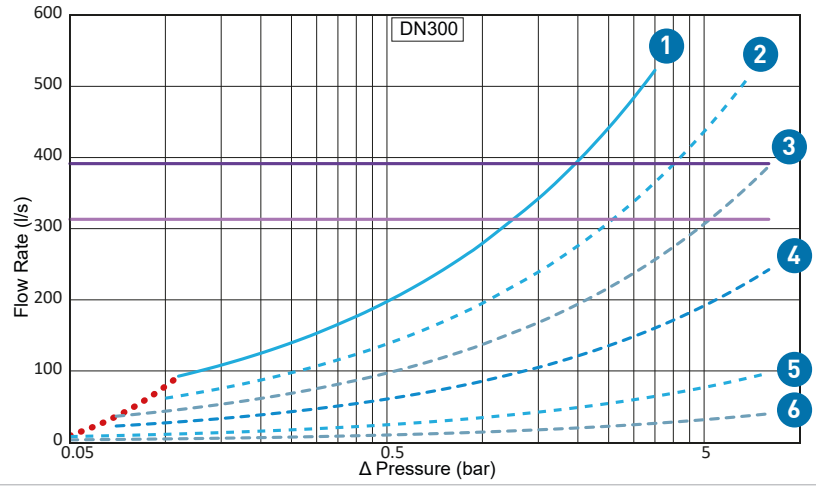
1 Maximum open
2 80% open
3 60% open
4 40% open
5 20% open
6 10% open
Minimum pressure drop
Maximum intermittent flow rate (7,5 m/s pipe velocity)
Maximum continuous flow rate (6 m/s pipe velocity)

Pressure loss DN250



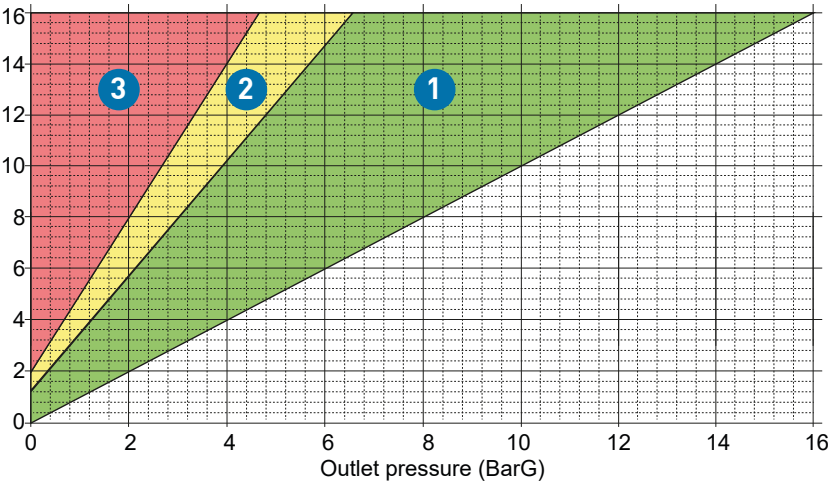
1 Maximum open
2 80% open
3 60% open
4 40% open
5 20% open
6 10% open
Minimum pressure drop
Maximum intermittent flow rate (7,5 m/s pipe velocity)
Maximum continuous flow rate (6 m/s pipe velocity)

Pressure loss DN300



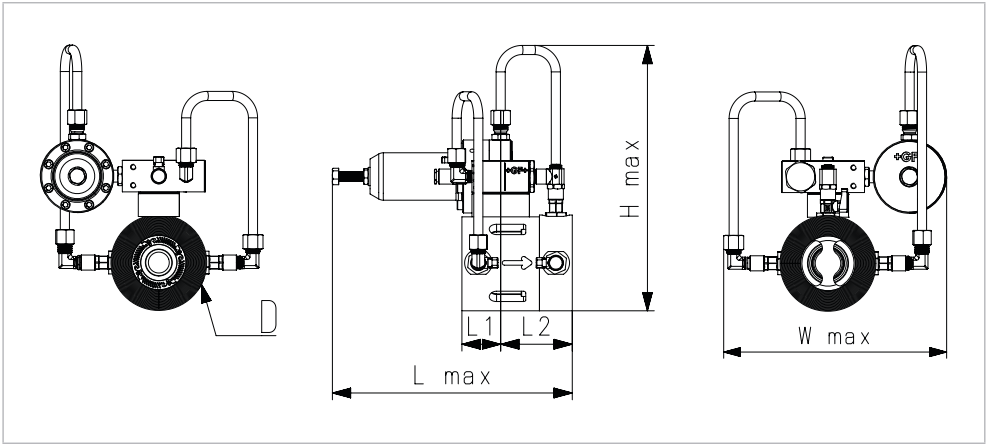
1 Maximum open
2 80% open
3 60% open
4 40% open
5 20% open
6 10% open
Minimum pressure drop
Maximum intermittent flow rate (7,5 m/s pipe velocity)
Maximum continuous flow rate (6 m/s pipe velocity)

Cavitation



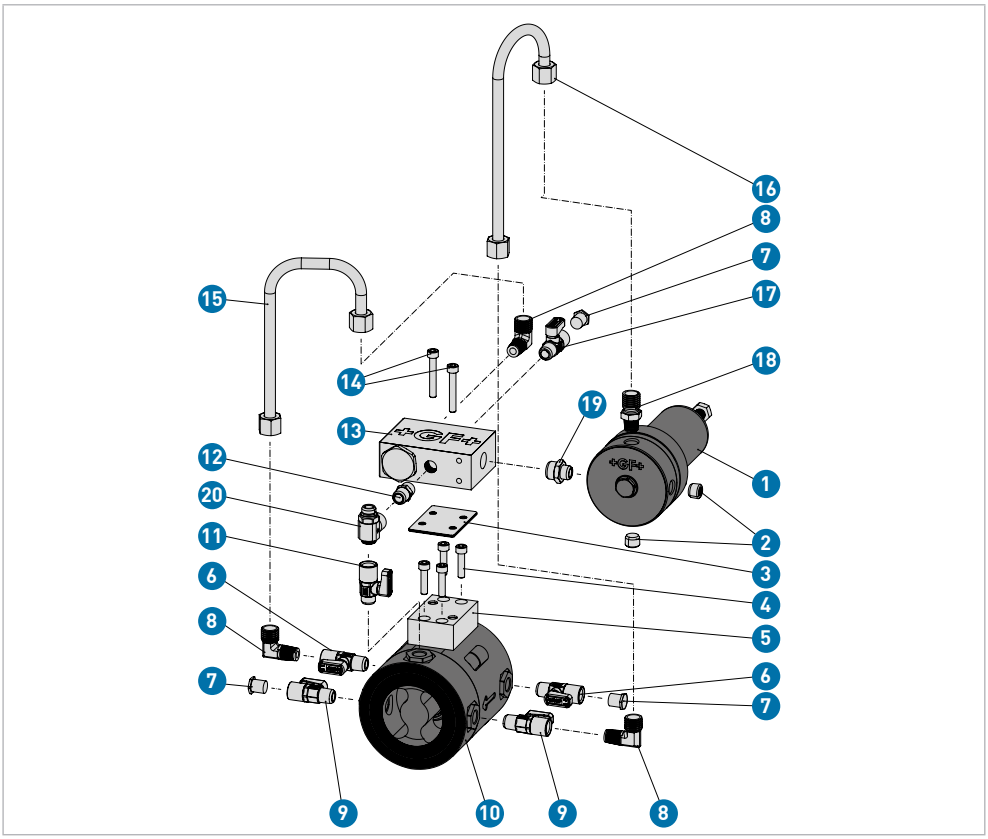
1 Safe operating region
2 Cavitation noise region
3 Cavitation damage region

Dimensions



Dimensions			Housing dimensions						
DN (mm)	Do2 (mm)	Inch (")	D (mm)	L max (mm)	L1 (mm)	L2 (mm)	H max (mm)	W max (mm)	Weight (kg)
50	63	2	105	290	42.5	78.5	265	245	4.7
80	90	-	142	290	57.0	78.0	322	274	6.0
100	110	4	162	290	76.5	78.5	322	286	6.8
150	160	6	218	290	125	80.5	339	346	10.7
200	225	8	275	298	149	149	398	346	22.3
250	280	10	328	348	174	174	451	399	34.8
300	315	12	378	398	199	199	501	449	51.0

Components



1 Pilot valve
2 Hex plug
3 Spacer plate
4 Socket head bolt M6x25
5 Control block base
6 Inlet ball valve
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

Article numbers

DN (mm)	Code 0 - 3 (bar [g])	Code 1 - 8* (bar [g])	Code 1 - 13.5 (bar [g])	Code 1 - 16 (bar [g])
50	193 173 311	193 173 011	-	193 173 611
80	193 173 313	193 173 013	-	193 173 613
100	193 173 314	193 173 014	-	193 173 614
150	193 173 317	193 173 017	-	193 173 617
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

Pressure ranges of the pilot valve springs

Color coding Pilot valve spring	Pressure range Adjustable (bar [g])
Silver*	0 - 3*
Black**	1 - 8**
Blue***	1 - 13.5***
Red	1 - 16

*For DN50 - DN150 only
**Standard version, 0 - 8.5 bar for DN200 - DN300
***For DN200 - DN300 only

Co-developed by OFUI

09/2025-A

Tel. +41 52 631 11 11 • www.gfps.com • E-Mail: info.ps@georgfischer.com