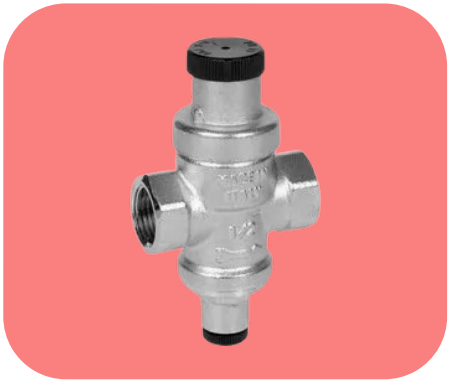
Piston pressure reducer valve
with pressure gauge outlet PN16

ZQSE201D15

zencQ



0020/ 01 / 23 EN

PRODUCT DESCRIPTION

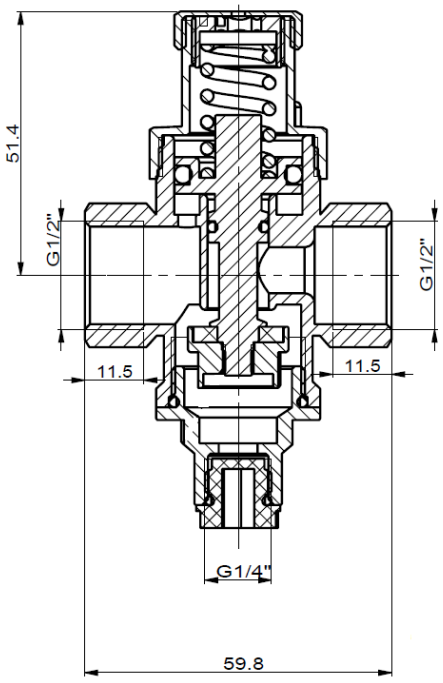
The pressure reduce valve is designed for controlled pressure reduction of the transported medium in cold and hot water supply networks. The regulator maintains a pressure at the outlet that does not exceed the setting.

The main installation site is apartment water metering units.

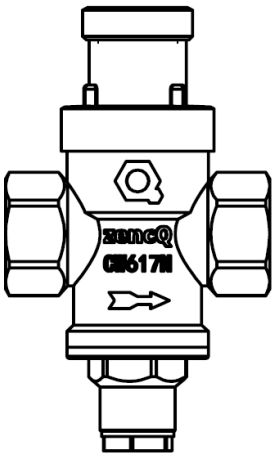
The pressure reducing valve does not apply to industrial pipeline fittings for operation in various industries in terms of its technical parameters, characteristics and purpose. Designed for domestic water systems only.

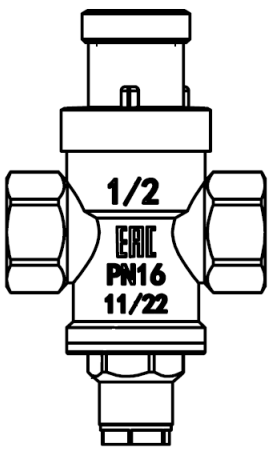
Piston PRV are small in size, quiet in operation and are perfect for use in small systems, such as apartments.

TECHNICAL PARAMETERS	
Maximum working medium temperature	110 °C
Minimum working medium temperature	0 °C
Nominal operating pressure, PN	16 bar
Pressure setting range	1-5 bar
Factory pressure setting	3 bar
Nominal flow (at 2 m/s according to DIN EN 1567)	1,305 m3/h
Connection type	Threaded
Connecting thread size	1/2"
Threaded connection standard	ISO288/1
Working environment type	Water, glycol

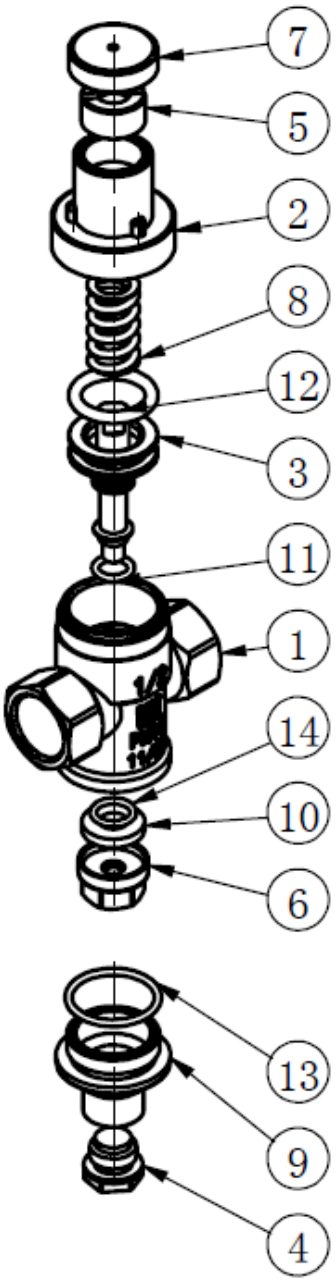


DIMENSIONS



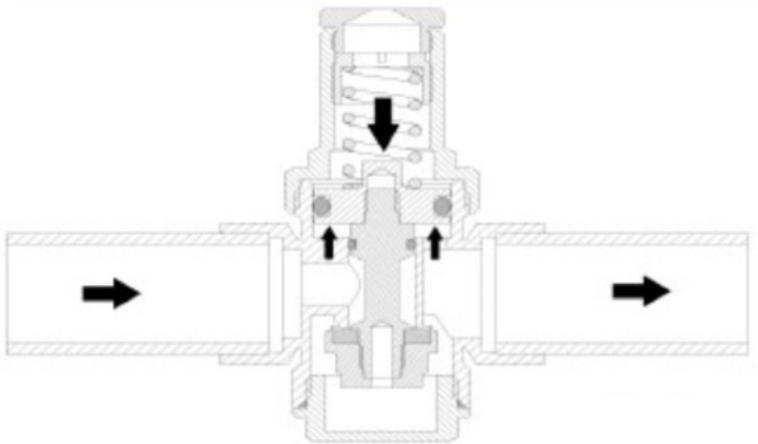


DESIGN AND MATERIALS		
1	Body	Brass CW617N
2	Body cap	Brass CW617N
3	Piston with stem	Brass CW617N
4	Pressure gauge outlet cover	PA66
5	Adjusting screw	Brass CW617N
6	Spool holder	Brass CW617N
7	Spring chamber plug	Brass CW617N
8	Spring	Stainless steel AISI304
9	Case bottom cover	Brass CW617N
10	Sealing washer	EPDM
11	O-ring	EPDM
12	Piston sealing ring	EPDM
13	O-ring	EPDM
14	O-ring	EPDM

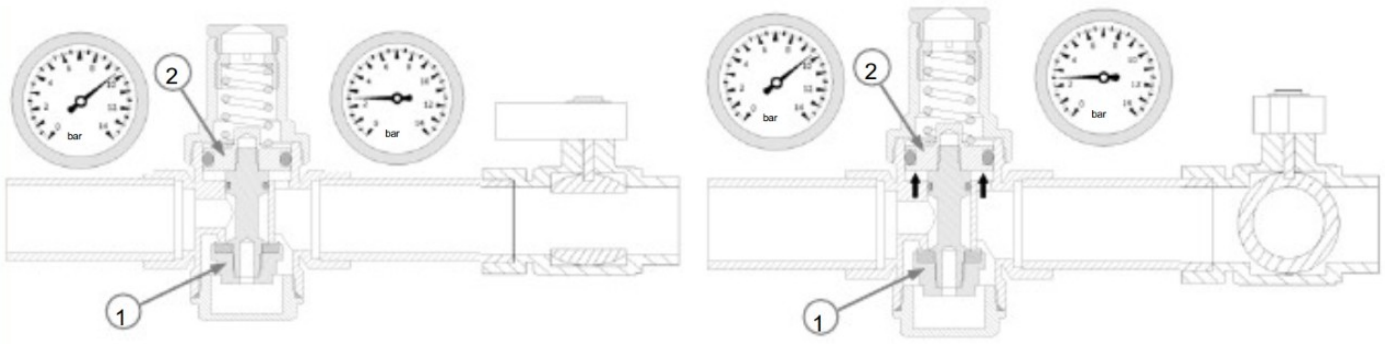


PRINCIPLE OF OPERATION

1. The work of PRV is based on the balance of two opposing forces that are formed inside the housing. The spring exerts pressure on the opening sector of the water passage and comes into force with the pressure that the spring produces in the closing direction (Fig. 1).



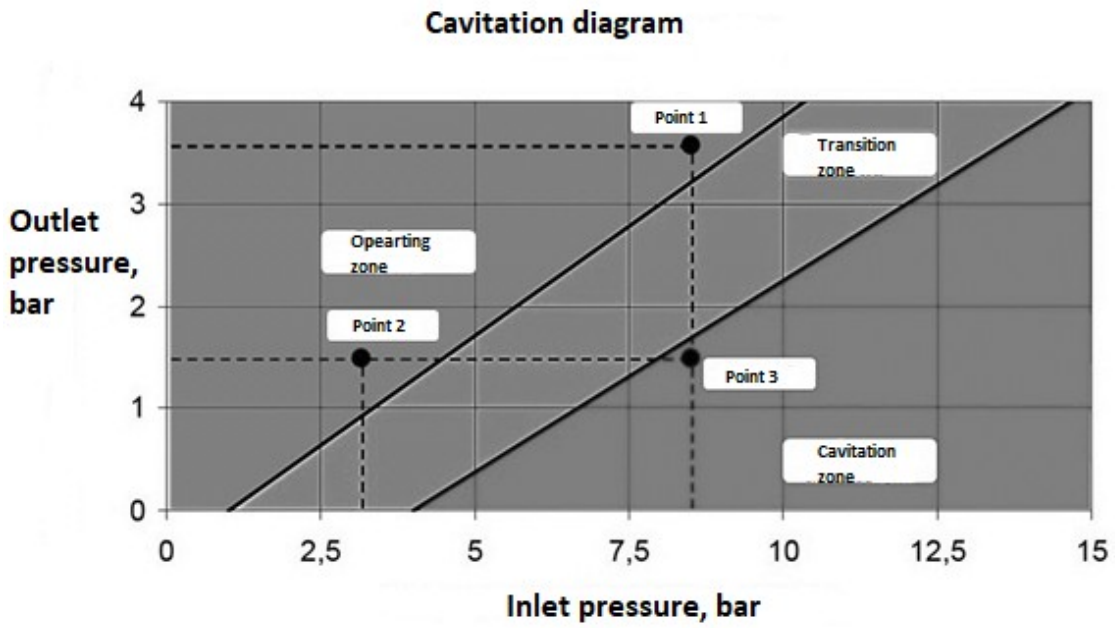
2. Work at water analysis. When valve is opened, the valve (1) moves down to open the passage for water. This is due to the pressure force of the spring on the diaphragm (2) which, under given conditions, becomes prevailing in comparison with the force of the water. With an increase in water flow, the flow of water inside the reducer increases due to the decrease in pressure that the valve (1) is usually subjected to. When several valves are opened, there is a drop in pressure (Δp) at the outlet, and a subsequent increase in flow (Q) as shown in graph no. 2.



3. Work without water analysis. With the valves closed, the outlet pressure increases until it reaches the set value in the setting phase.

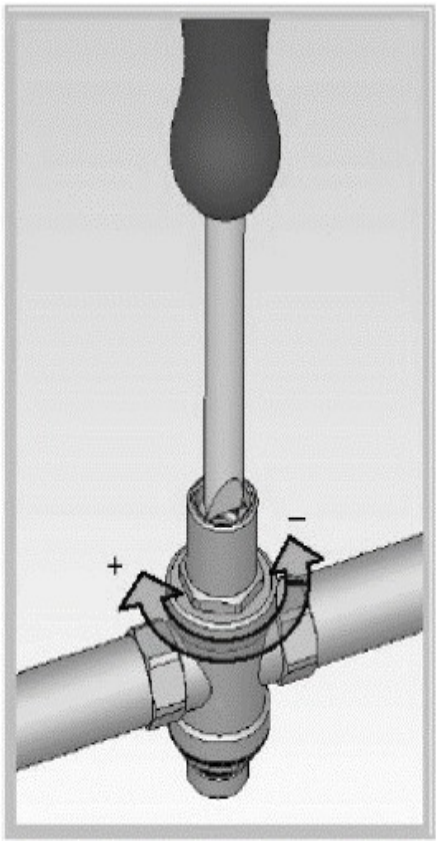
INSTRUCTIONS FOR THE SELECTION OF PRV

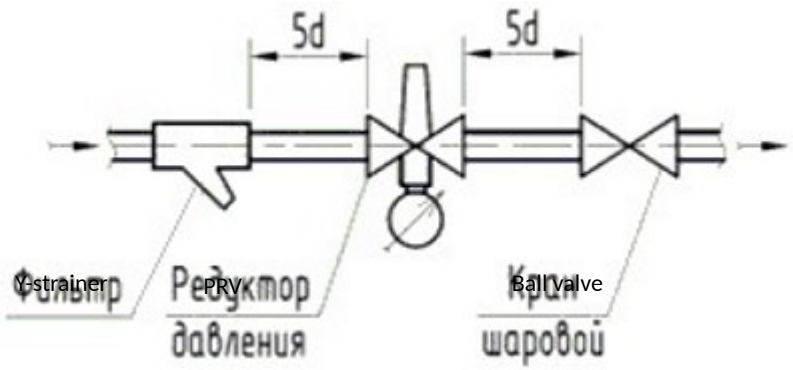
1. When determining the regulator set pressure, certain conditions must be met.
2. The speed of fluid movement in the domestic water supply should not exceed 2 m/s (according to DIN EN 1567). Violation of this condition may lead to exceeding the permissible noise level.
3. The ratio of the pressure at the inlet and outlet must be such that it falls into the working or transition zone of the cavitation curve.
4. If this condition is violated, the valve seat will be subjected to cavitation destruction.
5. Loss of pressure on the valve in relation to the setting should not exceed 1.2 bar. Violation of this condition leads to increased wear of the valve seat.



INSTALLATION REQUIREMENTS

1. The control valve must be installed after the water system has been cleaned, flushed and when the air has been expelled.
2. A pressure reducing valve is installed at the inlet of the water circuit you wish to protect. A check valve should be installed after the pressure reducing valve.
3. PRV can be installed in any direction, except that installation upside down is prohibited.
4. To protect pressure reducers from water hammer, it is recommended to use special devices to absorb them, which will help protect the reducer from damage.
5. Before installation, open all valves to flush the system and remove excess air from the pipes. It is recommended to install additional valves at the inlet and outlet to facilitate possible repairs in the future.
6. After closing the ball valve at the inlet, adjustment can be made by unscrewing the plastic plug, under which there is a screw. Use a screwdriver to adjust PRV. Clockwise increases pressure, counterclockwise decreases pressure. You can see the set pressure with a pressure gauge.
7. When installing the regulator, the direction of flow must match the direction of the arrow on the body of the product. The adjusting sleeve must be accessible for adjustment.
8. When using winding material, make sure that excess of this material does not fall into the inlet chamber of PRV. This can lead to their contact with the spool seat and the loss of PRV performance.
9. A regulator with a pressure gauge connection should be installed so that it is possible to install a pressure gauge.
10. Coupling connections should be made without exceeding the following permissible torques: for reducers DN1/2" - 35Nm; 3/4" - 45Nm.
11. Fittings should not experience loads from the pipeline (during bending, compression, tension, torsion, distortion, vibration, uneven tightening of fasteners, etc.). If necessary, supports or compensators should be provided to eliminate the load on the fittings from the pipeline.
12. The misalignment of the connected pipelines should not exceed 3 mm with a length of up to 1 m plus 1 mm for each subsequent meter.
13. When installing in front of the water heater, it is necessary to leave a free section of the pipeline between the heater and the regulator with a length of 5Dy.





OPERATION AND MAINTENANCE REQUIREMENTS

1. The valve must be operated at the pressure and temperature specified in the specification table.
2. Maintenance of the valve consists in removing sludge from the bulb, the air channel and the interturn space of the spring. Maintenance must be carried out every 12 months of operation.
3. Freezing of the working medium in the valve flask is not allowed.

MANUFACTURER

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Country of origin: China