

General

The main field of application of the pressure reducing valve is the prevention of chlorine recondensation and thus the destruction of PVC components.

Some explanations on this:

The disinfectant used most in water treatment processes is chlorine. It is stored in a liquid state in steel containers. Liquid elemental chlorine does not affect unalloyed steel. However, it very much affects PVC and its original shape. Most of the chlorine gas dosing devices are made of PVC. Therefore it is essential to avoid that liquid chlorine gets in contact with the components of the device.

Caution

Do not confuse liquid chlorine with chlorine gas solved in water. PVC is very well resistant to the last-mentioned chlorine solution.

There won't be any problems as long as the saturated chlorine gas supplied from the chlorine tanks maintains its gaseous condition. However, if chlorine gas recondensates in the pipes due to certain temperature conditions (such as water vapour on cold surfaces), it might damage the downstream systems and devices.

Even slightest energy losses immediately result in the generation of liquid chlorine. Energy losses are caused if the temperature of the pipes downstream of the chlorine tank are lower than the temperature of the liquid chlorine in the chlorine tank.

Please note that this condition is applicable for any temperature, i.e. chlorine recondensation takes place if chlorine gas flows from a 15° C chlorine tank into a 12° C pipe and equally if it flows from a 30° C chlorine tank into a 28° C pipe.

How can chlorine recondensation be avoided?

The energy losses mentioned above may be compensated by supplying energy with an electric heater. However, you must constantly supply current for this purpose.

Pressure reducing valves work much more efficiently and without the need of auxiliary energy. It reduces the pressure in the downstream pipe sufficiently so that the generation of liquid chlorine occurs far below 0°C. However, such temperatures practically never occur. It is advantageous that constant pressure and the absolute value of the pressure downstream of the pressure reducing valve is not decisive but that the pressure is significantly lower than the pressure in the liquid chlorine tank.



Technical data

Inlet pressure	max. 16 bar
Reduced pressure	0.5-3 bar (adjustable)
Throughput	max. 25 kg/h chlorine
Materials	Brass, nickel-plated FPM, Hastelloy, ceramic
Weight with manometer	approx. 3.5 kg

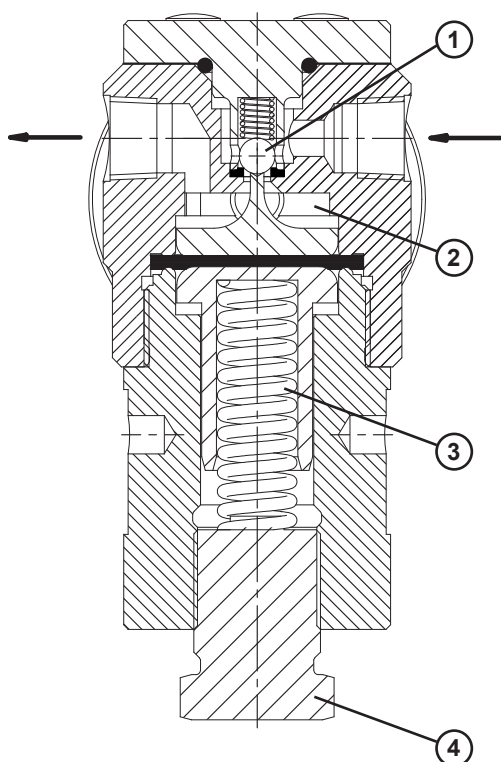
Model variants

Input	Output	Part number
Threaded pin BSP 5/8	Union nut BSP 5/8	23100300 (with manometer)

Accessories	Part number
Wall holder with screw and peg	88778

Pressure reducing valve C 7105

Pressure reducing valve C 7105



Functional description

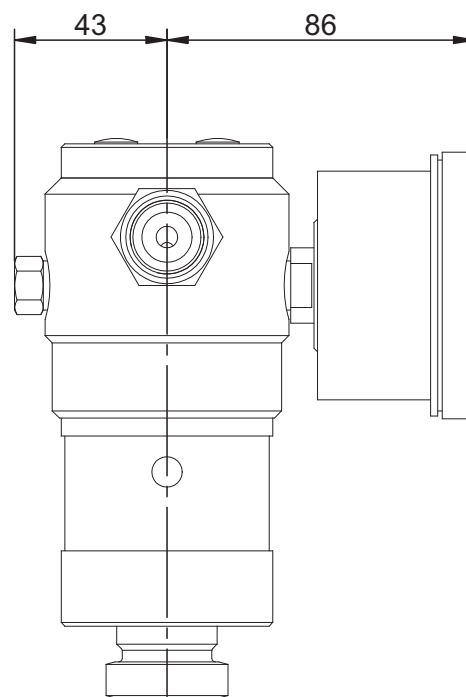
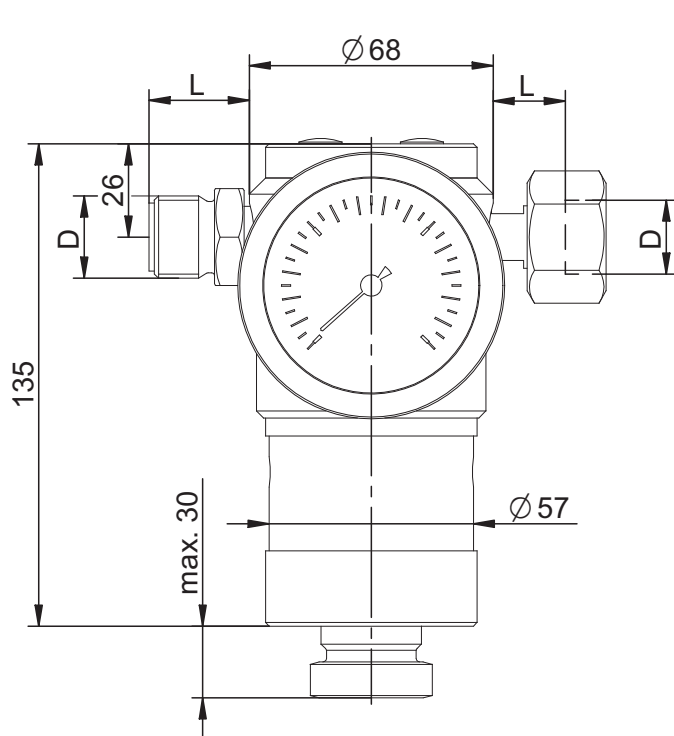
Chlorine from the chlorine bottle flows into the valve from the right side, it passes the ball (1) and flows into the membrane chamber (2) and to the output at the left side. The increasing pressure in the membrane chamber presses the membrane against the spring (3), and the membrane moves downwards. Then the ball (1) also moves downwards and closes the opening to the membrane chamber. With decreasing pressure in the membrane chamber, the spring (3) presses the membrane and the ball upwards. Thus, constant pressure is generated in the membrane chamber.

The pretension at the spring (3) is adjusted by means of the screw (4). This is to adjust output pressure.

The valve has a very compact design. Therefore, the output pressure at full flow is approx. 0.5 bar lower than when the system is down.

The optional manometer displays the reduced pressure.

Dimensional drawing



Connection	Size "D"	Size "L"
Union nut	BSP 5/8	20
Threaded pin	BSP 5/8	28