

Downstream pressure reducing stabilizing automatic control valve Mod. XLC 510 and 610

The CSA model XLC 510 and 610 series is a globe pattern piston operated automatic control valve, that reduces and stabilizes the downstream pressure to a constant value, regardless of variation in demands and upstream pressure conditions. Produced in compliance with PN 40 bar pressure standards and entirely made in ductile cast iron FBT epoxy painted and stainless steel, the valve is designed to reduce head loss, throttling noise and cavitation damage. The valve is normally equipped with anti cavitation low flow stability system AC, the double cage CP on request.

Applications

- Downstream of pumps to reduce the pressure on the main supply line.
- In derivation from the main line to stabilize the pressure of secondary line.
- As a protection against rise in pressure of industrial equipment and civil installations.
- On the inlet supply line of storage tanks in case of high static values to stabilize pressure and flow for the level control.

Accessories

- Pressure measurement kit.

Note to the engineer

- Inlet and outlet pressure, and flow rate are required for the proper sizing.
- CP double stage pressure reduction trim is recommended to provide a higher resistance to cavitation, and accurate regulation in case of low flow.
- A minimum length of 3 DN upstream of the valve is recommended for the best accuracy.

Additional features

- XLC 510/610-FR downstream pressure reducing with back-flow prevention.
- XLC 510/610-H downstream pressure reducing with high sensitivity pilot.

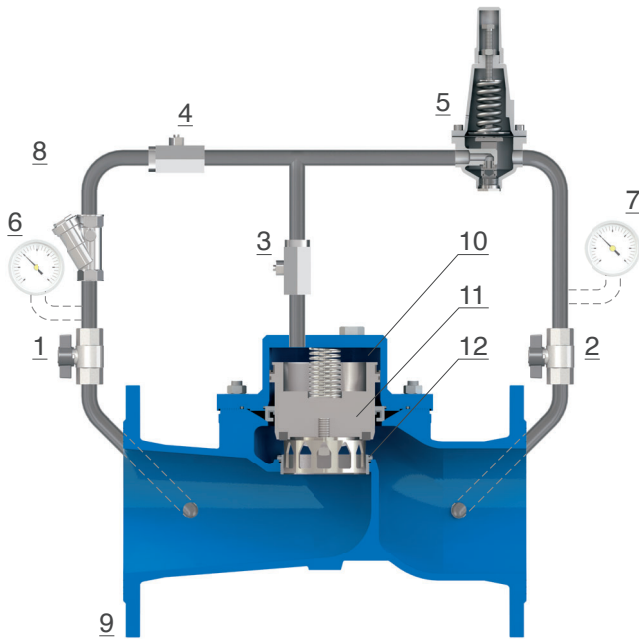
Working conditions

- Fluid: treated water.
- Minimum operating pressure: 0,7 bar.
- Maximum operating pressure: 40 bar.
- Maximum temperature: 70°C.

Downstream pressure pilot adjustment range

- Blue spring: 0,7 to 7 bar.
- Red spring: 1,5 to 15 bar.
- Higher values up to 25 bar on request.
- Values lower than 0,7 available with high sensitivity pilots.

Operating principle



The CSA model XLC 510/610 is an automatic control valve operated by a 2 ways pilot (5) with pre-set set and adjustable value. Should the downstream pressure rise above the pilot set point the latter will throttle and limit the flow to direct inlet pressure to the main chamber (10), thus pushing down the piston (11) to generate the head loss required for the valve (9) to reduce and stabilize the downstream pressure to a constant value. Should the downstream pressure fall below the pilot set point the piston (11) moves up increasing the passage through the seat (12), thus reducing the head loss through the valve. The flow in and out of the main chamber (10) is controlled by the CSA high sensitivity needle valve in stainless steel (3), needed for the valve's response time and accuracy also in case of rapid variation in demand. Thanks to isolation ball valves and a needle valve on the chamber (1, 2 and 3) the circuit and its components can be maintained without interrupting the flow.

Installation layout

The recommended XLC 510/610 installation layout includes sectioning devices and by-pass for maintenance operations, and a strainer to prevent dirt from reaching the control valve. The direct acting pressure reducer VRCD is the best choice on the by-pass thanks to its reliability also after long periods of inactivity. Anti-surge combination air valves FOX 3F AS are recommended upstream and downstream as well as a pressure relief valve CSA VSM installed in derivation from the line to prevent rise in pressure.

