



## High sensitivity altitude automatic control valve Mod. XLC 370/470

The CSA Model XLC 370/470 is a globe pattern hydraulically operated automatic valve that maintains the constant level of a reservoir and water tower, regardless of upstream pressure variations. The modulating control ensures a smooth regulation and absence of water hammer, as the valve will react proportionally to the variations in demand. Normally equipped with visual position indicator, and entirely made in ductile cast iron with FBT epoxy coating and stainless steel, the valve is designed to reduce head loss, throttling noise and cavitation damage.

### Applications

- To perform the level control of elevated tanks and water towers.
- Through the high sensitivity pilot to control the water level, without accessing the tank and the need of any piping and pilots.
- On the tank and reservoirs outlet supply lines to control the consumption by means of the storage static pressure.

### Accessories

- Linear position transmitter with 4-20 mA output Mod. CSA CSPL.
- On-off position transmitter Mod. CSA CSPO.
- Pressure measurement kit.
- Self-flushing and high capacity filter.

### Note to the engineer

- Inlet pressure, outlet pressure, flow rate and application are required for the proper sizing and cavitation analysis.
- For the proper functioning a minimum of 0,38 bar static value acting on the pilot is needed. Consider the use of a sustaining pilot for low pressure conditions and/or the CSA CSFL mechanical flow regulator.

### Additional features

- XLC 370/470-FR altitude automatic control valve with back-flow prevention.
- XLC 427 upstream pressure sustaining and altitude control valve.
- XLC 427-5 altitude automatic control valve with on-off solenoid control.
- The valve can be supplied without the regulation device GR.I.F.O. on request.

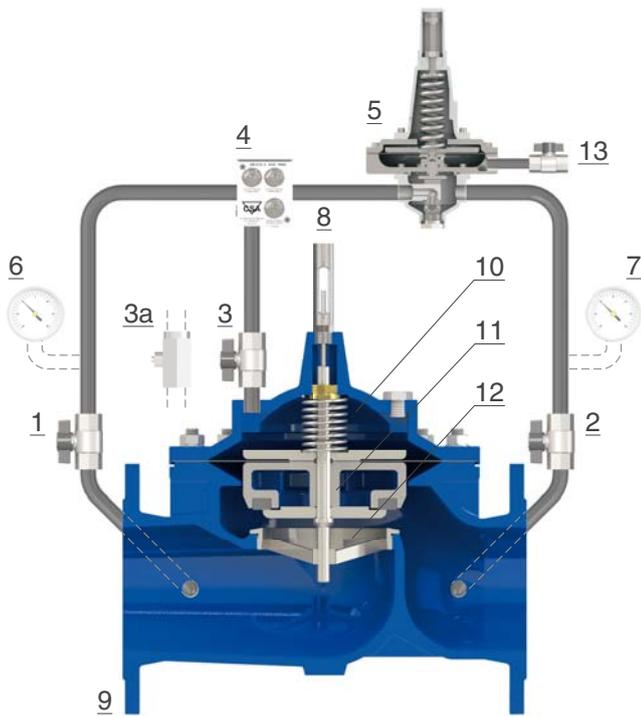
### Working conditions

- Fluid: treated water.
- Min. operating pressure on the valve: 0,7 bar.
- Minimum static pressure on the pilot: 0,25 bar.
- Max. operating press.: 16 bar.
- Recommended working pressure: 6 bar. Higher on request.
- Maximum temperature: 70°C.

### Altitude pilot adjustment range

- Blue spring: 0,38 to 1 bar.
- Red spring: 0,6 to 2,8 bar.
- Different values on request.

## Operating principle



The CSA Model XLC 370/470 is operated by a 2 ways high sensitivity pilot (5) sensing the static pressure of the level in need of regulation through the port (13). Should the latter drop due to consumption, the pilot (5) will open proportionally, relieving pressure out of the main chamber (10) thus lifting the obturator upwards (11) to generate flow through the seat and refill the storage. When the water level rises the pilot (5) will modulate throttling the flow through the circuit and diverting pressure back to the chamber (10), pushing the obturator downwards, and eventually closing the valve once the level has reached maximum set-point. Pressure in and out of the main chamber (10) is controlled by the CSA exclusive regulation device with filter called GR.I.F.O. (4), needed for the valve's response time and accuracy.

## Installation layout

Level control is obtained without any external piping and simply through a pilot sensing the static pressure coming from the water tower. The lay-out includes sectioning devices (1, 2) and by-pass, where CSA automatic control valves (4) are advised, for maintenance operations, and a filter (3) to prevent dirt from entering the main valve. Anti-surge combination air valves FOX 3F AS (5) are recommended upstream to release air pockets accumulated in working conditions, and to discharge large volumes of air during filling.

