

## Automatic flow limiting valve with downstream pressure reduction - **E3114-02 / E4114-02**



The E3114-02 / E4114-02 automatic valve reduces and stabilizes the downstream pressure at a set value, regardless of flow variations, and at the same time maintains the flow rate below a maximum value.

The circuit includes a flanged orifice, to be connected to the pilot and necessary for its operation.

Equipped with a visual position indicator and made entirely of stainless steel and ductile iron coated with epoxy paint using the FBT ( fluid bed technology ) technique, the valve reduces pressure drops, vibrations and damage linked to the phenomenon of cavitation.

		PN 10		PN 16	
Version	DN (mm)	Mass (kg)	References	Mass (kg)	References
E3114-02	80	33.00	E34A8016P02	33.00	E34A8016P02
E3114-02	100	40.00	E34B1016P02	40.00	E34B1016P02
E3114-02	125	59.00	E34B1216P02	59.00	E34B1216P02
E3114-02	150	66.00	E34B1516P02	66.00	E34B1516P02
E3114-02	200	112.00	E34B2010P02	112.00	E34B2016P02
E3114-02	250	190.00	E34B2510P02	190.00	E34B2516P02
E3114-02	300	307.00	E34B3010P02	307.00	E34B3016P02
E3114-02	400	518.00	E34B4010P02	518.00	E34B4016P02
E3114-02	500	862.00	E34B5010P02	862.00	E34B5016P02
E3114-02	600	1002.00	E34B6010P02	1002.00	E34B6016P02

		PN 10		PN 16	
Version	DN (mm)	Mass (kg)	References	Mass (kg)	References
E4114-02	40/50	27.00	E44A5016P02	27.00	E44A5016P02
E4114-02	65	29.00	E44A6516P02	29.00	E44A6516P02
E4114-02	80	34.00	E44A8016P02	34.00	E44A8016P02
E4114-02	100	51.00	E44B1016P02	51.00	E44B1016P02
E4114-02	150	99.00	E44B1516P02	99.00	E44B1516P02
E4114-02	200	156.00	E44B2010P02	156.00	E44B2016P02
E4114-02	250	267.00	E44B2510P02	267.00	E44B2516P02
E4114-02	300	443.00	E44B3010P02	443.00	E44B3016P02
E4114-02	400	784.00	E44B4010P02	784.00	E44B4016P02
E4114-02	600	2250.00	E44B6010P44	2250.00	E44B6016P44

## Applications

- Downstream of pumps to reduce pressure and prevent overloads
- To protect against pressure surges and ensure at the same time the supply of parts of the network located at higher altitudes in civil and industrial installations.
- In filtration systems to avoid damage and malfunctions due to excesses of flow rate or pressure.

## Accessories

- The position indicator with 4-20 mA output.
- The open-close indicator.
- Manometers.
- Self-cleaning high capacity filter.

## Notes to the designer

- Inlet and outlet pressure, flow rate and application are required for cavitation sizing and analysis.
- It is recommended to leave a straight section of pipe 5 diameters long between the valve and the calibrated flange, and another segment, 3 diameters long, downstream of the latter (image on the next page).

## Optional configurations

- Flow control valve with anti-reflux system.
- Pressure reduction and flow control with high sensitivity pilot.
- Pressure reduction and flow control with solenoid valve for remote on-off control.

## Operating conditions

- Fluid: treated water.
- Minimum pressure: 1,5 bar.
- Maximum pressure: 16 bar. Higher on request.
- Maximum temperature: 70 °C.

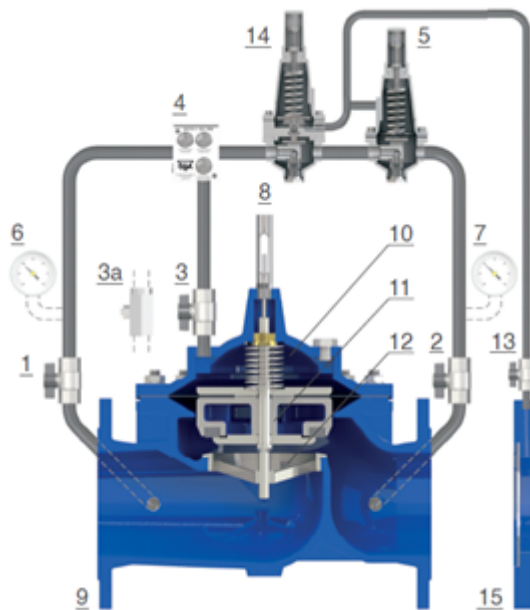
#### Reduction pilot adjustment range

- Red spring: 1.5 to 15 bar

#### Flow pilot adjustment field

- The flanged orifice is sized according to the maximum design flow rate. Variations from the setting value are possible in accordance with the flow rate table supplied with the valve.

### How it works



The valve is controlled by two adjustable two-way pilots, for pressure reduction (14) and flow control (5).

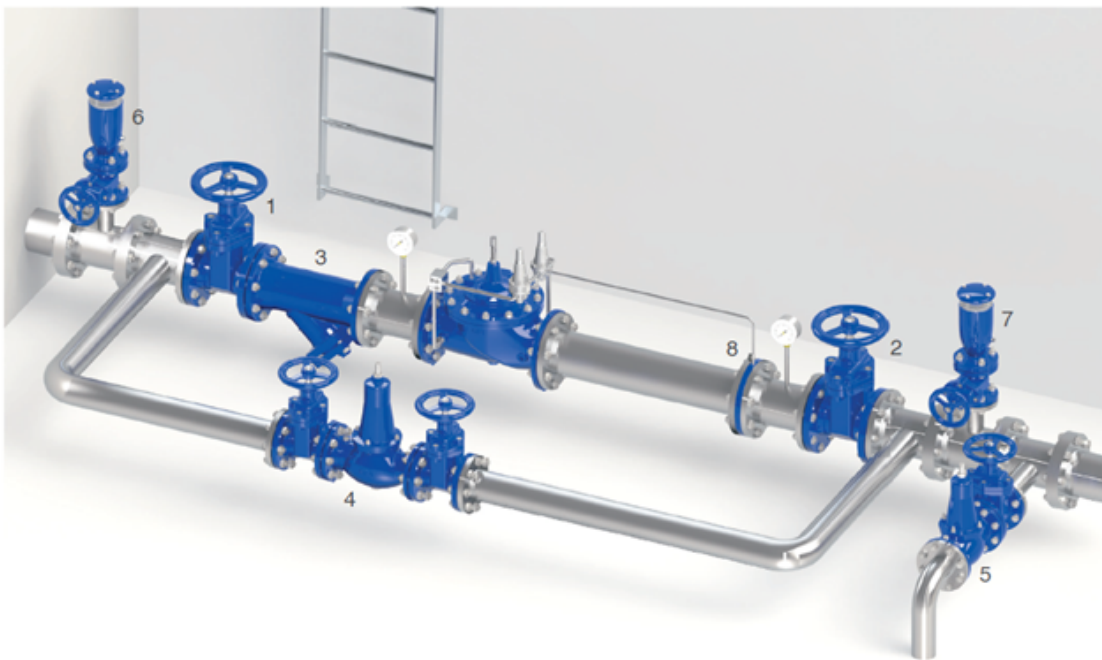
When the downstream pressure, detected at the flanged orifice (15) located on the pipeline, exceeds the set value, the pilot 14 limits the flow in the circuit; the pressure in the valve chamber (10), consequently, rises, causing the shutter (11) to descend towards the seat (12) and the downstream pressure to drop.

When, however, the latter falls below the calibration threshold of the pilot (14), the shutter (11) rises, reducing the pressure drop and causing the downstream value to rise.

The flow control pilot (5) spring force compensates for the difference in pressure upstream and downstream of the flanged orifice (15).

In the event that the flow rate tends to be higher than the maximum value, the pilot reduces the degree of opening, limiting the flow rate of the circuit to gradually increase the pressure in the valve chamber (10) in order to contain the flow through the seat (12) within the calibration range.

## Installation diagram



In the valve installation diagram, shut-off devices (1, 2), a bypass, are recommended with direct acting pressure control valves (4), to allow maintenance, combined anti-water hammer vents FBA (6, 7) for air release, upstream and downstream, and a DRV-S relief valve (5).

The flange calibrated (8) must be placed 5 DN downstream of the valve. Another 3 diameters of distance downstream of the orifice are necessary before changes in direction or slope that cause turbulence in the fluid.

*The information on this sketch is, to the best of our knowledge correct at the time of printing. However Saint-Gobain are constantly looking at ways of improving their products and services therefore reserve the right to change without prior notice, any of the data shown. Any orders placed will be subject to our Standard Conditions of Sale, available on request.*