Description

The valve has the job of ensuring that a minimum flow is maintained in a system even when all other routes are essentially closed. In normal operation it is closed, and only opens when the preset overflow pressure is exceeded.

The valve is a single-seating, two-way valve with spring loading. To the outside, the spindle is sealed by a stainless steel bellow that can absorb the full stroke. The cone is implemented as a control cone with a equal percentage characteristic. This avoids a sudden drop in the pressure when the valve opens.

Function:

Flow reaches the cone from underneath, and the overflow pressure, which depends on the tension set by the spring, pushes it upwards, so opening the passage.
The desired overflow pressure is adjusted by using a spanner to set the initial tension in the spring; it can be read from the scale on the side which covers a range from 1…4 bar (the factory setting is 2 bar).
The pressure setting is not an absolute value, but is the differential pressure between the inlet and outlet of the valve.

Assembly:

Attention:

- *Installation, operation and maintenance should be done only by qualified personnel.*
- *Release the regulating device before working on the valve.*
- *It is not permitted to work on the valve body and to exchange the regulating device as long as the valves are subjected to pressure and temperature.*

Installation position should be vertical (preferable) to horizontal.
Ensure that the installation direction is correct (directional arrows of the flow on the valve housing).
Regard the permitted max. operating pressure and temperatur as described in the corresponding valve specification sheet.
The mounting site should be easily accessible and have sufficient clearance for maintenance.
Ensure that the pipe line axes are flush and connection flanges are parallel. Provide suitable measures to absorb possible tensile and pressure forces. The valve must not serve as a fixed point.
It must be carried by the piping.

Clean pipelines thoroughly prior to installing the control valves in order to avoid damage through residual installation material, welding beads or forging scale.
If possible, provide a dirt trap in front of each control valve.

Retighten the screws of all flange connections (also lid and connection piece flanges) after initial heat-up and prior to commissioning / start-up.

Commissioning:

The valve was supplied with factory settings of either 2 bar or 1.5 bar. This setting must be checked in relation to the actual operating conditions found, and may need to be corrected.

The setting is changed using the adjusting screw. A size 17 spanner is required for this job. The adjusting screw causes the position of the upper spring plate to change, and so changes the initial spring tension. The setting can be read from the scale on the side (with a range from 1...4 bar). Turning to the left raises the trigger pressure, turning to the right lowers it.

The setting is correct when the valve is closed in normal operation (full rate of flow through the equipment), and only opens when the differential pressure exceeds the set value. If it is found that the factory setting is too low* (valve is continuously open), a higher value should be set. If the setting is too high (the valve either doesn't open, or opens too late as the differential pressure rises), a lower value must be set, although it must not be so low* that it remains open in normal operating conditions.
(* If the setting is too low, the flow can cause the cone to vibrate, and this can damage the valve!)