Edelstahl-Vordruckregelventil
Stainless Steel Inital-Pressure-Controller-Valve

Typ 80 - Baureihe / Series SKK, SKS, SKG, SMK, SMS, Typ 80, 81, 84 und 85

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Installation and operation instructions for-Inital-Pressure-Controller-Valve

1. Installation

Inital pressure controller valves are preferably to be installed at places in pipeline systems with smooth operation conditions, which means, as a consequence, not directly upstream or downstream of elbows, pipe manifolds, distributors, pressure generators, shut-off valves, isolating valves or other throttling devices. The installation should be carried out in horizontally positioned pipeline systems. The spring hood can, unless stated differently, be installed at the bottom or at the top. In the case of liquids, the spring hood should show in the bottom direction; in the case of steam the spring hood must show in the bottom direction.

The Illustrations 1 and 2 show the most frequent way of installation of an inital pressure controller valve in the pipeline. In installations which are highly important for the operation of the plant and whose breakdown would cause an unacceptable stoppage of the plant, a stop-and-check bypass duct (Illustration 3) can be installed. In the case of a breakdown, an emergency operation can be maintained by means of the bypass. Under normal operation conditions, the bypass is to be held closed.

Prior to the installation of the inital pressure controller valve, the pipeline must be cleaned and rinsed carefully. A sediment separator in the form of a dirt catcher (4) is to be provided if a contamination cannot be prevented during operation. After the removal of the packaging material, including plastic closing caps, the installation of the inital pressure controller valve is to be carried out in the pipeline, while the flow direction (arrow) indicated must be observed.

Inital pressure controller valves do not, as regulating valves, represent any sort of check valves which warrant a tight seat. According to VDI/VDE Guideline 2174, a leakage of 0.05 % of the Kvs value is permissible. We recommend, therefore, the installation of an upstream shut-off valve (1).

2. Safety Devices

Inital pressure controller valves are no substitute for safety installations.

The pipeline or installation inserted upstream of the inital pressure controller valve must, for this reason, be secured by means of a safety device, for instance by means of a safety valve. The safety valve must be designed with dimensions sufficiently large. The response pressure of the safety valve should be set approximately 40 percent above the maximum setting pressure of the inital pressure controller valves so that a blowing off at slight pressure fluctuations is avoided. Furthermore, the operator must also safeguard that the medium that is released in case the control piston seal or diaphragm is damaged from the spring hood does not represent an environmental risk. If necessary, a leakage pipeline must be connected at the spring hood.

3. Operation

The inital pressure controller valve has been tested prior to dispatch regarding function and density of the sealing with slightly cocked spring. A re-tensioning of the bolts and of the closing cap is required, in the case of steam, after complete heating of the inital pressure controller valve has been carried out.

The spring should, before the device is taken into operation, be in a released state (can be achieved by rotating the adjusting screw in counter-clockwise direction).
Initially, the downstream checking valve (2) must be opened, and subsequently the upstream checking valve (1) can be opened. Next, the upstream pressure or excess flowing pressure value is to be set to the desired pressure value. For this purpose, the adjusting screw is to be rotated in the clockwise direction until the upstream pressure value is reached. In this connection, the upstream manometer (7) must be observed. The adjusting screw is to be secured by means of the counter nut, after the setting has been completed. Heavily pulsating flows and impulsive pressure loads are to be avoided.

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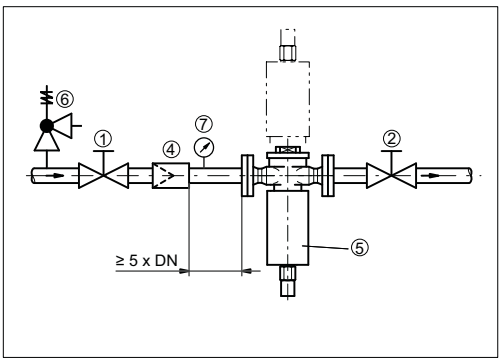
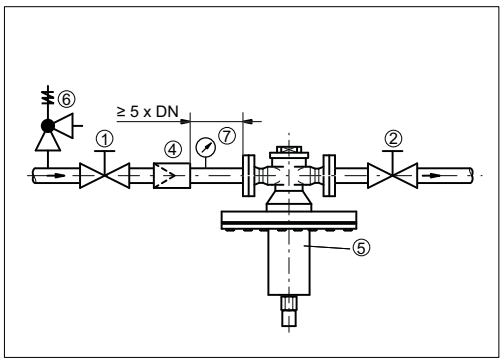
Installation diagram of an inital pressure controller valve

Piston design

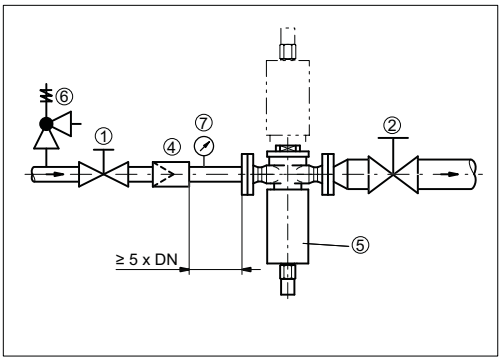


Diaphragm design



①② Shut-off valve
④ Strainer
⑤ Inital-Pressure-Controller-Valve
⑥ Safety valve
⑦ Pressure gauge

Figure 1 : inital pressure controller valve without bypass pipeline



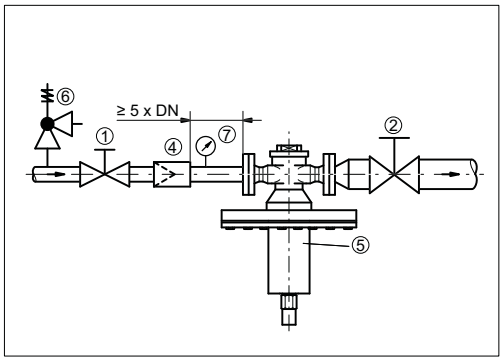


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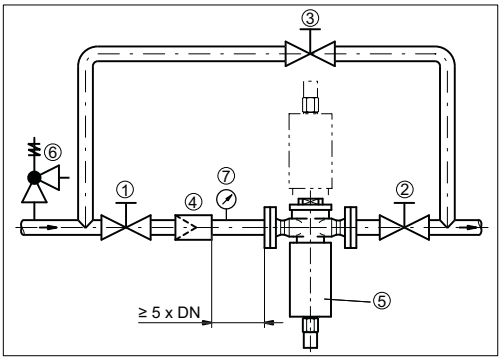
Figure 2 : inital pressure controller valve without bypass pipeline with pipe downstream enlargement at the outlet



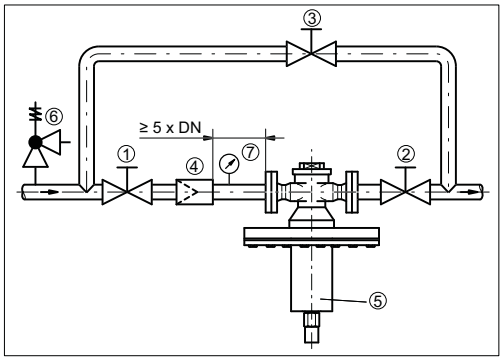


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Figure 3 : inital pressure controller valve with bypass pipeline

The installation of an inital pressure controller valve is in the case of gases in a standing position, in the case of liquids preferably in a suspended position, in the case of steam only in a suspended position.

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