Artikel-Nr. Article no.	
Fabrik-Nr. Serial no.	
Auftragsbestätigungs-Nr. Order Confirmation no.	
Kvs-Wert m^3/h Kvs-value m^3/h	
Hinterdruckbereich bar outlet pressure raqnge bar	

PRINCIPLE OF OPERATION

The outlet pressure which is to be controlled acts on the diaphragm and produces a force which in normal operating conditions is balanced to the spring force. As the outlet pressure rises above the pressure set by the adjusting screw, the valve closes. It opens again as soon as the pressure drops below the set pressure. The valve is open when the pipeline is depressurised.

INSTALLATION

Before installing the valve flush pipeline carefully. If impurities and dirt cannot be avoided during operation, a strainer should be mounted upstream. Remove packing material including plastic plugs (as well as the blanking plug in the control line connection). Check spring rods for freedom of movement. Do not paint the spring rod guide and piston guide surfaces. The valve should be installed into the pipeline free from stress in such a way that the arrow on the housing correctly indicates the direction of flow. The valve bottom part must point downward. The valve should be fitted in a horizontal pipeline section which is not subjected to turbulence. The valve should not be fitted close to manifolds, isolating valves or other pipeline sections where the cross section is reduced. The distance between control line connection and pressure reducing valve should be at least ten times the nominal diameter. The control line diameter should be so selected as to correspond to the connection on the valve. No isolating devices, temperature regulators etc., should be installed between regulating valve and control line connection. Do not isolate the valve.

SAFETY DEVICES

Pressure reducing valves are not isolating devices that provide total sealing of the valve seat. In accordance with VDI/VDE guideline 2174 a leakage rate of 0.5% of the constant volume flow value is permitted. In accordance with the German Accident Prevention Regulation VGB17 a safety device must therefore be installed which prevents the maximum permitted system pressure being exceeded. The pressure reducing valve should, unless indicated otherwise, be protected to ensure that 1.5 times the maximum set pressure is not exceeded, e.g. with a setting range of 5 bar max. the safety valve relief pressure must no exceed 7.5 bar.

START UP

The operation and sealing characteristics of the pressure reducing valve have been checked before the valve left the works. Before commissioning the valve, the water reservoir should be filled via the fill plug. The valve is supplied with springs released. During commissioning the inlet side should be slowly opened ensuring that fluid emerges from the outlet side. The valve should not be subjected to pressure surges. Finally the outlet pressure, which is to be controlled, should be set. On valves equipped with spring rods and nuts, coarse adjustment is achieved by adjusting these nuts on both sides, whereas fine adjustment is done centrally using the setting screw.

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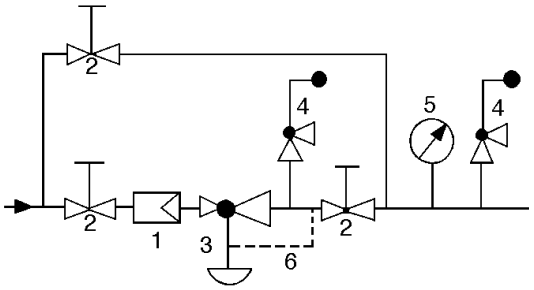
MAINTENANCE

Depending on the characteristics of the medium and the systems operating conditions, the valve should be checked or serviced once a year or at shorter intervals.
In case of servicing or valve malfunctioning the following procedure should be adopted:
1. Valve jammed:
Jamming of the valve can be diagnosed as follows: close inlet pipe. The valve should now open, i.e. the spring rods move into top position an the pistons push against the piston flanges. Now the inlet pipeline should be opened and the outlet line closed. The valve must now close with the spring rods moving into bottom position and the pistons moving away from the flanges. We also recommend to check the spring rods for bending. Grease the spring rod guiding.
2. Valves equipped with piston control: replacing diaphragm or O-ring seals:
A leaking or damaged diaphragm or O-ring is indicated by fluid leaking around either of the two pistons. Depressurise the valve, release springs and remove bushes complete with grooved pins or nuts. Withdraw bridge complete with spring rods downward. Remove screws and nuts from piston flanges and remove piston flanges. Remove the nuts from spindles and remove pistons. Renew diaphragmand gasket or O-ring seals. For re-assembly the dismantling procedure should be reversed. The spindle nut should be tightened, the same applies to the screws and nuts on pistons fitted with O-rings. In case of diaphragm control the screws should be tightened only lightly to avoid crushing the diaphragm.
The water reservoir should be replenished before re-commissioning the valve.

SPARE PARTS

When ordering spare parts give the serial number of the valve, article number and designation, as well as the item numbers of the parts.

RECOMMENDED INSTALLATION



1 strainer *
2 shut-off valve
3 pressure reducer
4 safety valve*
5 pressure gauge *
6 control line

* use MANKENBERG products

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