

PILOT-OPERATED STEAM PRESSURE REDUCING VALVE

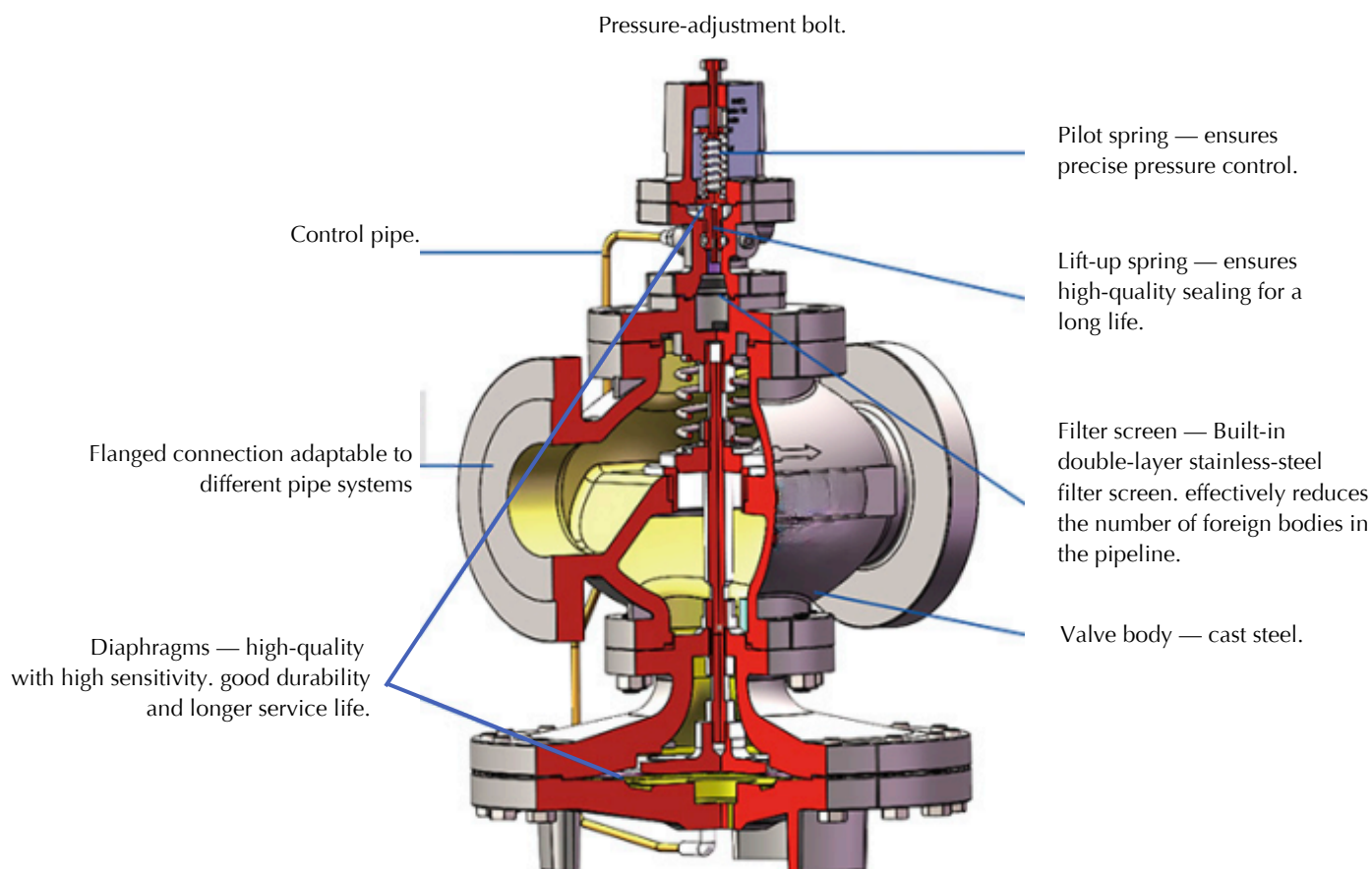


Designed and made as
per
GERMAN Standard

PILOT-OPERATED STEAM PRESSURE REDUCING VALVE

Why do we need to reduce pressure?

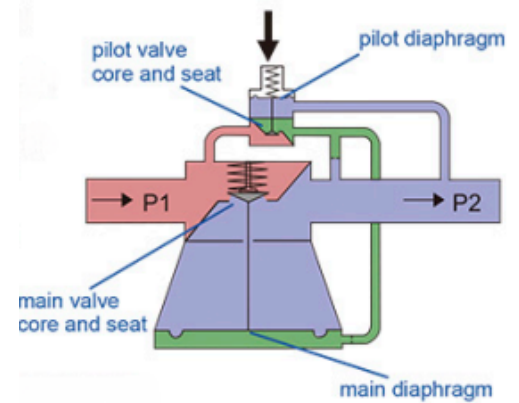
- To save costs.
- To improve pressure stabilisation.
- To improve steam dryness and steam quality.
- To meet the pressure needs of production equipment.
- To allow steam transmission with high pressure, and steam use in the equipment with low pressure.



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Working Principle

- Initially, the pressure-adjustment bolt is in a loose state and the valve is in a closed state.
- The inlet steam (P1) comes into the valve. Adjusting the bolt downwards, compresses the pilot valve spring, and opens the pilot valve. This lets the steam enter the main valve diaphragm chamber through the external control pipe. The steam pushes the main diaphragm upwards to open the main valve, and the steam enters the outlet pipe (P2). Therefore, by adjusting the pressure-adjustment bolt, we can stabilise the steam pressure (P2).
- When the outlet pressure (P2) is too high. The high outlet pressure (P2) will be transmitted to the pilot valve chamber through the feedback pipe. and the high-pressure steam will push the pilot valve diaphragm upwards, decreasing the valve opening, partially or completely closing the pilot valve. At the same time, the high-pressure steam in the main diaphragm chamber to discharge via the external control pipe. When the pressure is released, the main valve opening will also decrease, stabilising the outlet pressure (P2) at the set value.
- When the outlet pressure (P2) is lower than set value, the steam pressure in the feedback pipe decreases, and the pilot valve opening will increase. This causes the pressure of the steam entering the main diaphragm chamber to increase. and the main valve opening to also increase, thereby stabilising the outlet pressure (P2) at the set value.



Features

- Easy maintenance.
- High precision - control pressure to ± 0.2 Bar.
- Cast steel body - service life than standard cast iron.
- Ensures outlet pressure is not affected when inlet pressure fluctuates greatly.
- The outlet pressure remains the same when the steam flow changes drastically.
- The valve is a single spherical shape. with good sealing performance and less leakage.
- Due to the large area of the main diaphragm and the external induction structure, the outlet pressure can be accurately controlled.
- Keeps outlet pressure stable at set value even when steam is no longer being used.



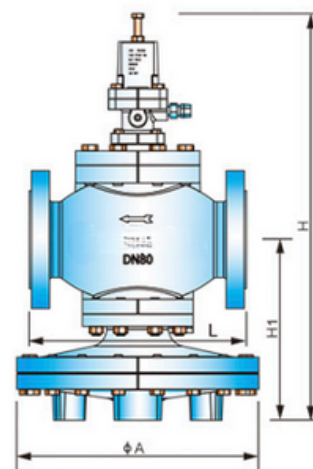
Recommendations

- The inlet and outlet pipe sizes should be correctly selected according to the flow and pressure.
- When the flow ratio is greater than 10:1, it is recommended to use a parallel pressure-reducing valve set.
- When the pressure reduction ratio is greater than 10:1, it is recommended to use a series pressure-reducing valve set.
- The pressure-reducing valve should not be oversized. otherwise vibration of the outlet pressure or cavitation can occur.
- The feedback induction tube of the pressure-reducing valve must be installed correctly and must have a certain slope and distance. It should not be too close to the outlet of the pressure-reducing valve.
- A steam-water separator and filter must be installed in front of the pressure reducing valve. The steam-water separator can effectively drain the condensate to prevent water hammer from damaging the pressure reducing valve. The filter can effectively filter any foreign bodies in the pipeline to prevent them from damaging the pressure reducing valve or invalidating the pressure reduction.

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Approximate dimensions/weights (mm/kg)

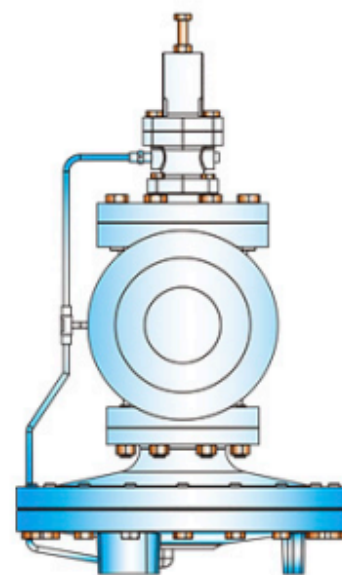
Size	L	H1	H	A	Weight
DN15	150	170	398	200	15.5
DN20	150	170	398	200	16.0
DN25	160	175	404	226	21.0
DN32	180	192	434	226	24.0
DN40	200	192	434	226	24.5
DN50	230	216	498	276	36.0
DN65	290	251	552	352	64.5
DN80	310	264	575	352	71.5
DN100	350	321	658	401	111.0



Materials

Model		LPRV
Medium		Steam
Inlet pressure		0.1–2.0MPa
Outlet pressure		(A) 0.02–0.15MPa
		(B) 0.1–1.4MPa
		Less than 85% of the inlet pressure
Minimum differential pressure		0.05MPa
Maximum operation temperature		220 °C
Maximum pressure reducing ratio		20:1
Material	Body	Cast steel
	Main valve	Alloy steel
	Main seat	Alloy steel
	Pilot valve	Alloy steel
	Pilot valve seat	Alloy steel
	Diaphragms	Stainless steel
Type of connection		PN16, PN25 flange
Size		DN15–DN100

Size	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100
Kv	4.3	6.2	9.4	12.4	16.3	27.7	51.9	67.5	103.8



Please provide the following information when ordering:

1. inlet Pressure
2. Inlet temperature (C)
3. Putlet Pressure (Bar)
4. Flow (Kg/h)
5. Inlet Pipe Size (DN)
6. Outlet Pipe Size (DN)

Please provide: minimum flow, normal flow and maximum flow

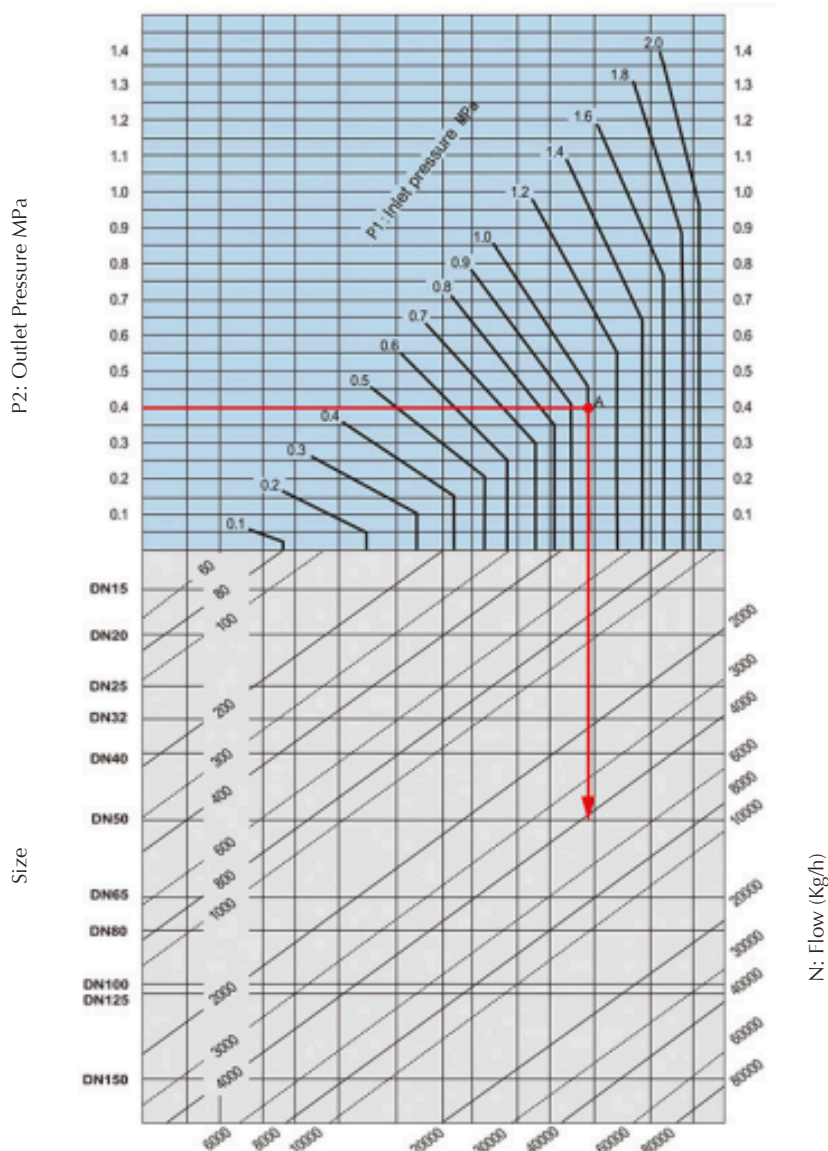
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• Selection example:

Assumption:

The inlet pressure of the pressure reducing valve is 1.0 MPa, The outlet pressure is 0.4 MPa, and the steam flow 3000Kg/h

According to the above parameters, first find the intersection of the inlet pressure (1.0MPa) and the outlet pressure (0.4MPa) in the above table, then extend vertically downward from this intersection to find the size and the flow of 3000kg/h. It is recommended to select the next size up from this point. - Select DN50



Contact Us

Special size, rate and pressure please see manufacturer

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