

PRESSURE REDUCING VALVE

Fig. VA720

Specification

- ✓ Pilot operated diaphragm type pressure reducing valve
- ✓ Designed to reduce high inlet pressure to a lower, stable downstream pressure
- ✓ Maintains constant downstream pressure despite variations in inlet pressure or flow demand
- ✓ Nominal Pressure: PN10 / PN16 / PN25
- ✓ Size Range: DN50 – DN600 (PN25 available DN50 – DN300)
- ✓ Flanged Connections: BS EN 1092-2
- ✓ Working Medium: Water
- ✓ Operating Temperature Range: 0°C to 80°C
- ✓ Adjustable downstream pressure range: PN10: 2–8 bar, PN16: 2–12 bar
PN25: 2–16 bar
- ✓ Fusion Bonded Epoxy (FBE) coating in accordance with BS EN 14901



Material Specification

Item	Part Name	Material	Specification
1	Up Bonnet	Ductile Iron	EN-GJS-450-10
2	Middle Bonnet	Ductile Iron	EN-GJS-450-10
3	Valve Body	Ductile Iron	EN-GJS-450-10
4	Main Gasket	EPDM	
5	Disc Head	Stainless Steel 304	BS EN 10088 - 1.4301 / X5CrNi18-10
6	Gland of Main Disc	Ductile Iron	EN-GJS-450-10
7	Seat	Stainless Steel 304	BS EN 10088 - 1.4301 / X5CrNi18-10
8	Main Disc	Ductile Iron	EN-GJS-450-10
9	Spring	Stainless Steel 304	BS EN 10088 - 1.4301 / X5CrNi18-10
10	Stem	Stainless Steel 304	BS EN 10088 - 1.4301 / X5CrNi18-10
11	Bushing	Bronze	C89833
12	Diaphragm	EPDM	
13	Bottom Gland	Ductile Iron	EN-GJS-450-10
14	Up Gland	Ductile Iron	EN-GJS-450-10
15	Cap Plug	Bronze	50-300/SS304, 350-600/ C89833
16	Pressure Gauge	Stainless Steel 304	BS EN 10088 - 1.4301 / X5CrNi18-10
17	Ball Valve	Brass	HPb59-1
18	Pilot Valve	Stainless Steel 304	BS EN 10088 - 1.4301 / X5CrNi18-10
19	Needle Valve	Stainless Steel 304	BS EN 10088 - 1.4301 / X5CrNi18-10
20	Built-in Strainer	Stainless Steel 304	BS EN 10088 - 1.4301 / X5CrNi18-10

HYDROSTATIC TEST PRESSURE

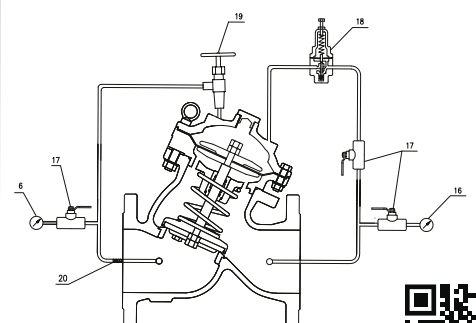
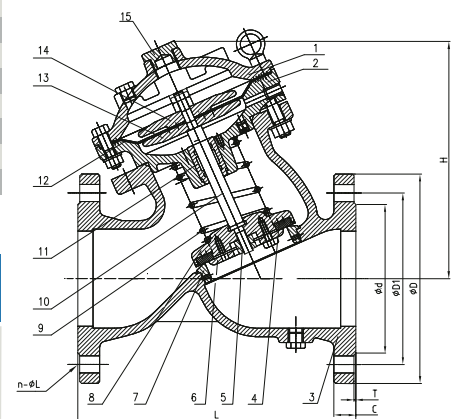
- ✓ PN10: Shell - 25 bar Seat - 11 bar
- ✓ PN16: Shell - 24 bar Seat - 17.6 bar
- ✓ PN25: Shell - 37.5 bar Seat - 27.5 bar

Corrosion Protection

Fusion Bonded Epoxy with a minimum thickness of 250 microns for excellent corrosion resistance

FEATURES & BENEFITS

- ✓ Automatically maintains stable downstream pressure without external power
- ✓ Pilot operated design provides accurate and responsive pressure regulation
- ✓ Wide pressure adjustment range for different system requirements
- ✓ Stable performance over a wide range of flow conditions
- ✓ Diaphragm operated main valve provides smooth and reliable operation
- ✓ Dual chamber design helps protect the diaphragm from high-pressure water and debris
- ✓ Built-in strainer in the pilot control circuit helps reduce maintenance requirements
- ✓ Adjustable response characteristics for stable system operation
- ✓ Suitable for water distribution, HVAC and general water-service applications



Notes

Specifications, materials and dimensions shown are subject to change without prior notice



Main Dimensions (mm)

Size		DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300
PN		25	25	25	25	25	25	25	25	25
L		203	216	241	292	330	356	495	622	698
H		170	195	215	255	290	360	450	550	645
D		165	185	200	235	270	300	360	425	485
D1		125	145	160	190	220	250	310	370	430
d		99	118	132	156	184	211	274	330	389
C		19	19	19	19	19	20	22	24.5	27.5
T		3	3	3	3	3	3	3	3	4
n-ΦL		4-Φ19	8-Φ19	8-Φ19	8-Φ23	8-Φ28	8-Φ28	12-Φ28	12-Φ31	16-Φ31

Size	DN50	DN65	DN80	DN100	DN125	DN150	DN200		DN250		DN300		DN350		DN400		DN450		DN500	
PN	10/16	10/16	10/16	10/16	10/16	10/16	10	16	10	16	10	16	10	16	10	16	10	16	10	16
L	203	216	241	292	330	356	495	495	622	622	698	698	787	787	914	914	978	978	978	978
H	170	195	215	255	290	360	450		550		645		700		790		850		900	
D	165	185	200	220	250	285	340	340	405	405	460	460	505	520	565	580	615	640	670	715
D1	125	145	160	180	210	240	295	295	350	355	400	410	460	470	515	525	565	585	620	650
d	99	118	132	156	184	211	266	266	319	319	370	370	429	429	480	480	530	548	582	609
C	19	19	19	19	19	19	20	20	22	22	24.5	24.5	24.5	26.5	24.5	28	25.5	30	26.5	31.5
T	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	5	5
n-ΦL	4-Φ19	4-Φ19	8-Φ19	8-Φ19	8-Φ19	8-Φ23	8-Φ23	12-Φ23	12-Φ23	12-Φ28	12-Φ23	12-Φ28	16-Φ23	16-Φ28	16-Φ28	16-Φ31	20-Φ28	20-Φ31	20-Φ28	20-Φ34

Size	DN600	
PN	10	16
L	1295	1295
H	1030	
D	780	840
D1	725	770
d	682	720
C	30	36
T	5	5
n-ΦL	20-Φ31	20-Φ37

PRODUCT REVIEW

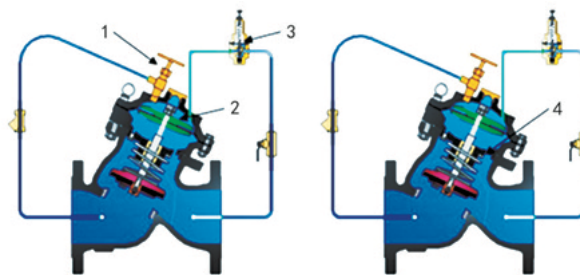
The VA720 pressure reducing valve is a diaphragm type hydraulic control valve that uses the hydraulic pressure of the pipeline as the driving source. The main function is to reduce the high pressure in front of the valve to the set low pressure state behind the valve. No matter how the flow rate or the upstream pressure fluctuates or changes, the high pressure in front of the valve can be reduced to the low pressure behind the valve, and the pressure can be kept stable.

WORKING PRINCIPLE

PRODUCT REVIEW

The VA720 pressure reducing valve is a diaphragm type hydraulic control valve that uses the hydraulic pressure of the pipeline as the driving source. The main function is to reduce the high pressure in front of the valve to the set low pressure state behind the valve. No matter how the flow rate or the upstream pressure fluctuates or changes, the high pressure in front of the valve can be reduced to the low pressure behind the valve, and the pressure can be kept stable.

WORKING PRINCIPLE



The VA720 pressure reducing valve is equipped with adjustable pressure reducing pilot valve, needle valve, compact strainer, ball valve, etc.

Normally water flow continuously enters the main valve upper control chamber 2 through the needle valve 1 from the inlet, and the pressure reducing pilot valve 3 is adjusted to the set pressure value; When the downstream pressure exceeds the set value, the pilot valve senses the pressure and slowly tends to close, the pressure in the upper control chamber gradually increases, and the main valve slowly tends to close and the downstream pressure decreases to the set value of the pilot valve; When the downstream pressure is lower than the set value of the pilot valve, the pilot valve gradually opens, the upper control chamber releases the accumulated pressure, and the main valve gradually opens.

The orifice hole 4 in the middle chamber of the main valve can make the valve response smoother.

The ball valve behind the pilot valve can be adjusted according to different working conditions, to limit the discharge speed of the control chamber water flow, stabilizing the action of the main valve. If necessary, this ball valve can be manually closed to achieve emergency cut-off.

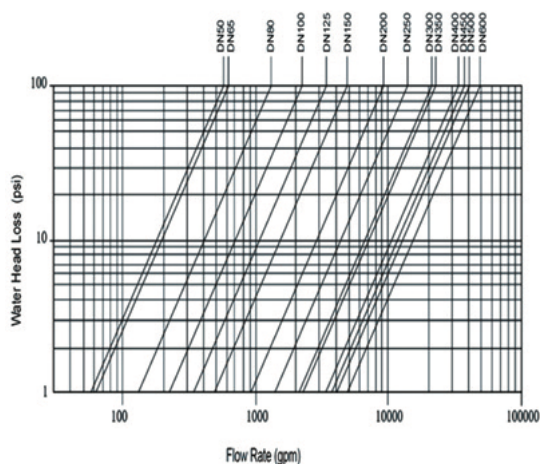
Notes

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Main Dimensions (mm)

Size	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
KV	41	53	105	175	285	402	730	1160	1400	1770	3010	3225	3395	4272



KEY ACCESSORIES



Pilot Valve
Model : VA720
Material of valve body and valve bonnet : SS304
Nominal working pressure : PN16、PN25
Decompression range : 0.2-1.2Mpa、0.2-1.6MPa

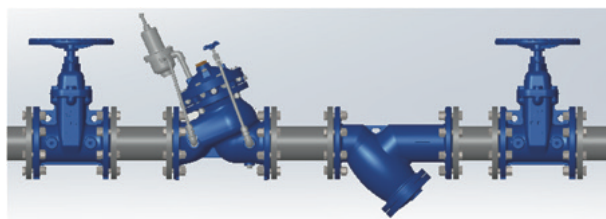


Pressure Gauge
Connecting thread and range
PN16 : M14X0.25MPa
PN25 : M14X4 MPa

INSTALLATION & APPLICATION

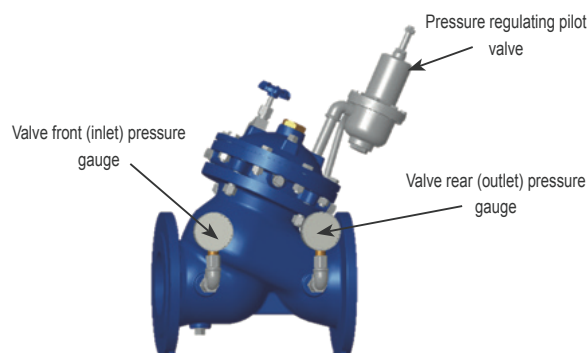
1. Installation instructions

- 1.1 Check if the nameplate, certificate and valve body casting information of the pressure reducing valve are consistent.
- 1.2 When installing the pressure reducing valve, the direction of water flow should be consistent with the arrow on the valve body. Do not install it in the opposite direction.
- 1.3 The best installation method for pressure reducing valves is to install horizontally on the pipeline, and when installed vertically, the direction of water flow is from bottom to top.
- 1.4 The pipeline should be thoroughly cleaned before installing the valve to ensure that there is no debris, welding slag, etc. in the pipeline.
- 1.5 The plug at both ends of the pressure reducing valve should be removed before installation to prevent impurities from entering the valve chamber.
- 1.6 A strainer should be installed in front of the pressure reducing valve, one maintenance gate valve should be installed before and after the valve.

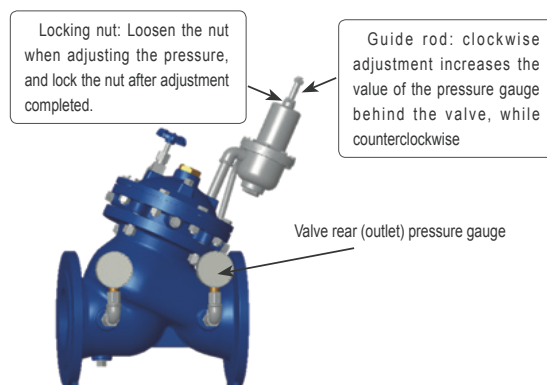


2. Precautions for installation and debugging

- 2.1 The valve is installed on the pipeline, and after inspection the ball valves on the pressure reducing valve are all in an open state. Before debugging, close the maintenance valve after the pressure reducing valve to avoid sudden increase in pipeline pressure and damage to the equipment in the pipeline.
- 2.2 The pressure reducing valve has undergone preliminary debugging before leaving the factory, with a debugging pressure of 0.45MPa. However, during system operation it still needs to be debugged again according to different working conditions; Adjust the guide rod of the pilot valve clockwise to increase the outlet pressure, and counterclockwise to decrease the outlet pressure.



- 2.3 The specific debugging method is as follows: after the system stabilizes, if the downstream pressure is required to be greater than 0.45MPa, directly tighten the guide rod of the pilot valve clockwise, observe the pressure gauge value behind the valve until the required pressure is reached; If the downstream pressure is required to be less than 0.45MPa, loosen the guide rod counterclockwise to the top position. At this time, the outlet pressure is 0, and the valve will not release water; Slowly tighten the guide rod clockwise, and the outlet pressure will gradually increase (observe the pressure gauge behind the valve). When the required value is reached, tighten the locking nut at the bottom of the guide rod.



- 2.4 If the pressure adjustment is excessive, reset and readjust. Loosen the guide rod counterclockwise to the top position, and then slowly tighten the guide rod clockwise. The outlet pressure will gradually increase (observe the pressure gauge behind the valve). When the required value is reached, tighten the locking nut at the bottom of the guide rod.
- 2.5 When the downstream pressure meets the requirement for the working condition, open the gate valve after the pressure reducing valve. When there is a slight fluctuation in pressure, fine tune the pilot valve to ensure that the outlet pressure reaches a stable state.
- 2.6 When vibration occurs during debugging, please try to exhaust the gas from the pipeline.

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TRANSPORTATION & STORAGE

1. During transportation, take care to prevent violent vibration, throwing, collision, etc., and with proper protection from rain or chemical erosion.
2. The valve should not be dragged on the ground or moved along with the ground surface to avoid damage to the surface, metal plates, and sealing surfaces.
3. The valve should be placed in a safe place and waterproof and dustproof.
4. Both ends of the inventory valve heads should be sealed.

COMMON PROBLEMS & SOLUTIONS

SN	Problem	Cause	Solution
1	The outlet pressure of the pressure reducing valve is almost equal to the inlet pressure, without reducing pressure	a. Needle valve opening is small (almost completely closed) or completely closed	After completely closing the needle valve, open 1.5 to 2 turns to check if the pressure reduction is normal
		b. The valve is not set successfully	Follow the "Precautions for installation and debugging" Re debug
2	The valve vibrates severely and makes loud noise	a. Air accumulation in the valve chamber causes vibration	Attempt to exhaust the gas from the pipeline
		b. The pressure difference between the inlet and the outlet is too large, leading to cavitation and energy loss	By installing multiple pressure reducing valves in the pipeline to reduce the pressure difference, the ratio of inlet pressure to outlet pressure should not exceed 3
3	The downstream pressure is unstable	a. The locking nut of the pilot valve is loose	Readjust the pilot valve and lock the nut
		b. The difference between the required flow rate and the actual flow rate is too large	Recalculate the flow rate and select the appropriate specification

MAINTENANCE

1. Regularly check whether the fasteners of each part of the valve are loose or damaged, and repair them in time if there are any problems.
2. For working conditions where temperature and pipeline pressure changes, it is recommended to tighten the bolts again after 24 hours of operation to compensate for any possible looseness.
3. During the repair and maintenance of valves, users should use accessories of the same size and material as the original. They can also be ordered as spare parts for replacement during maintenance.
4. The valve in use shall be maintained every year before winter, and the valve shall be flexibly operated and timely discharged once a month to keep clean.
5. After the maintenance is completed, the relevant operations should be filled in the 《Valve Maintenance and Repair Record》; the operator and the person in charge should sign and confirm after completion.

CAUTIONS

Before installation please carefully check whether the product information matches the operating conditions. If there are any differences, please consult before use; Special working conditions such as seawater and corrosive media must be specified and customized.

SPECIFICATION & STANDARD

Connection Standard		BS EN 1092-2		
Coating Standard		ANSI/AWWA C550		
Nominal Diameter DN		50 ~ 600mm		50-300 mm
Nominal Pressure PN		1.0 MPa	1.6 MPa	2.5 MPa
Test Pressure	Strength Test	1.5 MPa	2.4 MPa	3.75 MPa
	Sealing Test	1.1 MPa	1.76 MPa	2.75 MPa
Max inlet pressure		1.0 MPa	1.6 MPa	2.5 MPa
Adjustable range of outlet pressure		0.2-0.8 MPa	0.2-1.2 MPa	0.2-1.2 MPa
Applicable Temperature		0 ~ 80°C		
Applicable Medium		Water		

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