Pressure Reducing Valve, PN16

MV80-211

Installation & Maintenance Instructions

1 DESCRIPTION OF GOODS:

1.1 MV80-211 series adjustable pressure reducing valve is a kind of hydraulic controlling valve, it is an intelligent valve that adjusts the pressure by itself to control the pressure of the pipeline. Mainly used in the drain system, industrial water system, construction system, fire protection system and so on.

1.2 MV80-211 is of adjusting the discharge pressure at the setting value.

1.3 Product Standard:

- Design standard： CJ/T219 JB/T10674
- Flanged standard：BS4504 PN16
- Face to face to： CJ/T219
- Test Standard： ISO5208-1982

1.4 Technical factor:

Size range：DN40-DN300 PN10/16, PN25

- Pressure adjustable range：0.05-0.8Mpa 0.8-1.3Mpa, 1.3Mpa-2.0Mpa
- Shell Test：1.5 PN
- Seal Test：1.1 PN
- Main body material: Ductile Iron, SS304 and SS316.
- Sealing：EPDM or NBR
- Application Temperature：≤80℃
- Application Medium：Water

1.5 Dimension:(mm)

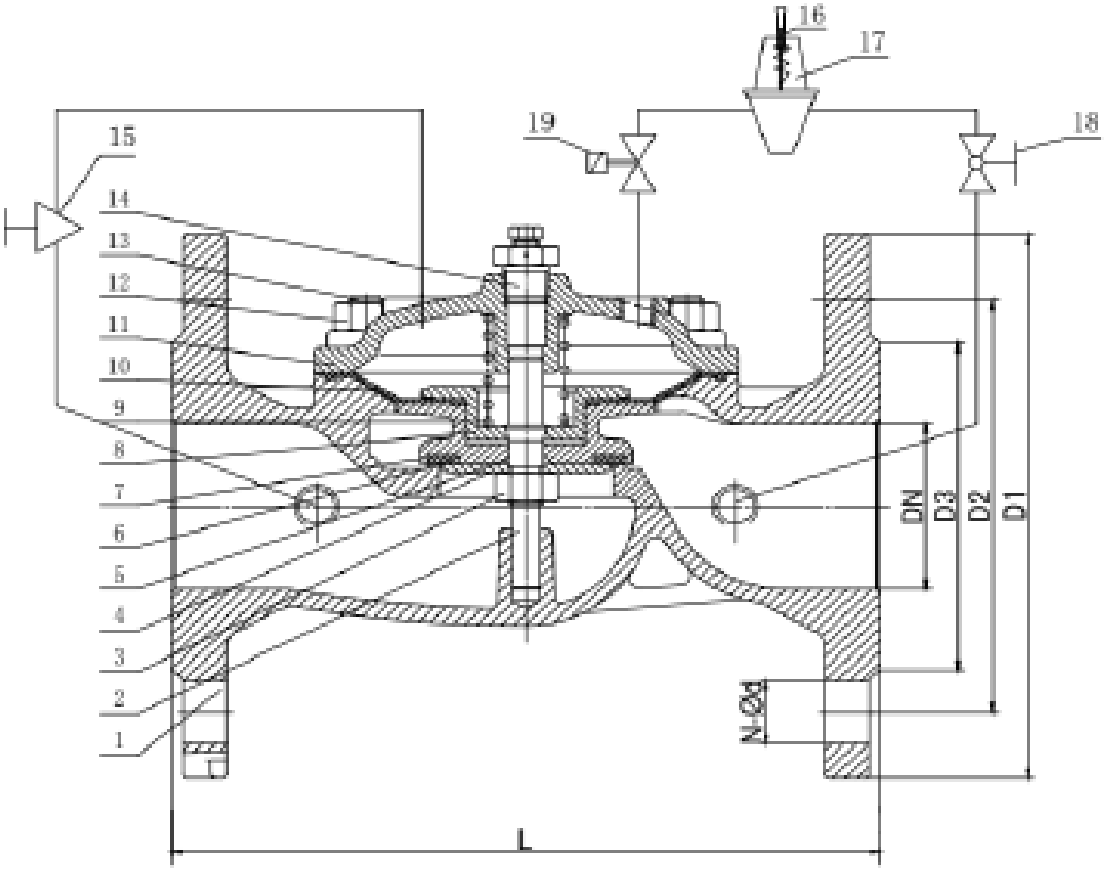
SIZE	D1		D2		D3		N-ød		L
	1.0 Mpa	1.6 Mpa	1.0 Mpa	1.6 Mpa	1.0 Mpa	1.6 Mpa	1.0 Mpa	1.6 Mpa	
DN50	165		125		99		4-ø19		203
DN65	185		145		118		4-ø19		216
DN80	200		160		132		8-ø19		241
DN100	220		180		156		8-ø19		292
DN125	250		210		184		8-ø19		330
DN150	285		240		211		8-ø23		356
DN200	340		295		266		8-ø23	12-ø23	505
DN250	395	405	350	355	319		12-ø23	12-ø28	622
DN300	445	460	400	410	370		12-ø23	12-ø28	698

Pressure Reducing Valve, PN16

MV80-211

Installation & Maintenance Instructions

1.6 Parts of name:



NO	Parts Name	Material	NO	Parts Name	Material	NO	Parts Name	Material
1	Body	QT450/CF8	8	Diaphragm press plate	QT450/CF8	15	Needle valve	304
2	Stem	304	9	Spring	304	16	Lock screw	304
3	Hexagon nut	304	10	Diaphragm	EPDM/NBR	17	Pilot valve	CF8
4	Retaining Ring	304	11	Cover	QT450/CF8	18	Ball valve	304
5	O-ring	NBR	12	Hexagon nut	304			
6	Sealing Ring	NBR	13	bolt	304			
7	Disc	QT450/CF8	14	Air vent	304			

2 WORKING PRINCIPLE

The discharge pressure of the adjustable pressure reducing valve is controlled by the adjusting screw on the pilot valve, which operates in coordination with the needle valve. Once finished setting, the pressure at the discharge remains at the desired value. When the main valve is opened, the medium flows towards the outlet and also enters the upper diaphragm chamber of the main valve through the needle valve, and stabilizing disc opening at a certain position, so that the pressure at the discharge is constant.

When the pressure increases at the discharge, the medium increases the pressure in the upper chamber of the main valve, disrupting the pressure balance between the upper and lower chambers of the main valve, reducing the valve opening value, increasing the flow rate of the medium through the opening, causing pressure loss, and reducing the pressure at the discharge. On the contrary, when the pressure at the discharge decreases, the opening of the main valve rises, and the pressure at the discharge increases.

3 INSTALLATION

3.1 The pressure reducing valve shall be installed vertically or horizontally. During installation, pay attention to the flow direction and do not get it wrong. Before installing the pressure reducing valve, the pipeline system must be flushed and cleaned to prevent welding slag, oxide scale and other dirt from flowing into the valve and affecting the normal operation of the valve.

3.2 The butterfly valve or gate valve and filter shall be installed in front of the pressure reducing valve. The gate valve or butterfly valve is generally installed in front of the filter to cut off the water flow during maintenance.

3.3 The rotation space of the handle of ball valve and hand wheel of needle valve shall be enough.

3.4 Before the system is opened, check other valves in this system and ball valves on the pressure reducing valve are all in open position.

3.5 If the main valve is installed in the shadow well, there should be left enough maintenance space. The main valve must be installed horizontally to easily lift during maintenance.

4 METHODS OF ADJUSTING PRESSURE RATE

4.1 Close the gate valve or butterfly valve at the inlet and open the gate valve or butterfly valve at the outlet.

4.2 Close the needle valve first, and then open it at range of half position to one turn; then open the ball valve on the outlet of the pilot line. Making the pressure on inlet/outlet reduced to below 0.1Mpa, if the pressure above the setting pressure value, it must open the gate valve or butterfly valve at the discharge in order to reduce pressure to below 0.1Mpa.

4.3 Close the gate valve or butterfly valve at the discharge.

4.4 Turn the adjusting screw of the pilot valve to the top and be careful not to unscrew it out.

4.5 Opening the gate valve or butterfly valve on the inlet slowly until fully open.

4.6 Open the air vent in the cover, release all air in the upper chamber of the diaphragm, and then tighten the air vent screws.

4.7 If the outlet pressure rises to above 0.1Mpa, it is necessary to open the outlet gate valve or butterfly valve to reduce the pressure to below 0.1Mpa, and then close the outlet gate valve or butterfly valve tightly.

4.8 Slowly tighten the adjusting screw of the pilot valve, gradually and slowly increase the outlet pressure until it reaches the required pressure value, and then lock the adjusting nut.

4.9 Slowly open gate valve and butterfly valve on the outlet.

4.10 If the pressure is adjusted exceeding the set pressure, it must be adjusted again from the first step.

5 ATTENTION

5.1 During in operation, close the outlet ball valve will affect the closing of the pressure reducing valve.

5.2 P1(inlet pressure), P2(outlet pressure)
P1-P2≥0.2MPa.

5.3 P1/P2≤0.35MPa, otherwise, the disc position will occur Cavitation and cause noise.

5.4 If requiring adjust pressure outside of above range, contact manufacturer.

6 MAINTENANCE

6.1 If Pressure reducing valve unable to close.

a. Check the ball valve, if it is closed, it needs to be opened.
b. Check the main valve, if it is stuck by debris, clean the debris in the pipeline.

6.2 If Pressure reducing valve unable to open.

a. Check the ball valve, if it is closed, it needs to be opened.
b. Check whether the system pressure is too low (the system pressure should be above 0.2 MPa)
c. Check whether the spring in the pilot valve has not been compressed. If it has not been compressed, it is necessary to re-adjust and set the pilot valve again.
d. Check whether the pressure at discharge is higher than the

7 STORAGE, PACKING&TRANSPORTAION

7.1 During transportation and storage, the pressure-relief valve shall not collide, dump or be affected by rain and snow.

7.2 The pressure relief valve should be stored in a clean, dry, fireproof and well-ventilated place, and there should be no corrosive gas around; it shall be placed stably to prevent the valve from overturning.

7.3 When carrying the pressure relief valve, it should use a pallet, handle it carefully.

7.4 The seals of the pressure relief valve are made of rubber. It is strictly prohibited to use alcohol, gasoline, and other chemical solvents for flushing.