



Pilot Operated Flange Pressure Reducing Valve User Manual

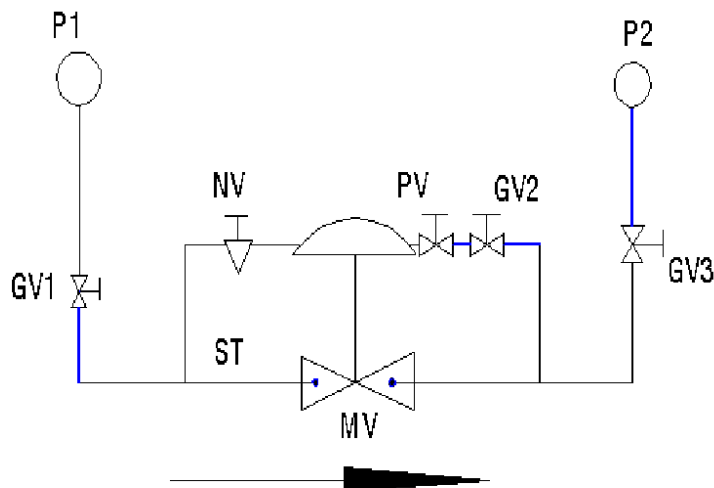
(SKU: PRVDIN-F)



Function Description And User Manual

The pressure reducing valve is mainly composed of main valve, pressure reducing pilot valve, needle valve, etc.

I . The piping diagram of pressure reducing valve is as follows:



Symbol description:

MV: Main valve

NV: needle valve

ST: filter

PV: Pressure reducing pilot valve

GV: ball valve

P: pressure gauge

II . Function description

- 1、 This product is a diaphragm type hydraulically operated valve body, which is installed in the water supply system and controls the outlet pressure of the main valve to a certain value.
- 2、 This product reduces the inlet pressure to a required outlet pressure by adjusting the pressure reducing pilot valve (PV), and keeps the outlet pressure stable by relying on the energy of the medium itself, that is, the outlet pressure will not change due to the upstream pressure and flow change.
- 3、 The NV needle valve in the above figure must be opened counterclockwise, otherwise the valve will not be operational. GV2 ball valve also needs to be opened, otherwise it is also not operational. (All the above valves are open in default packaging)
- 4、 During normal operation, the outlet pressure is automatically adjusted by the pressure reducing pilot valve to achieve the purpose of pressure reduction. When it is necessary to reset the outlet pressure, and it is determined that the water in the pipeline is flowing, use a spanner wrench to rotate the screw at the top of the pilot valve. When looking from the top to the bottom, the outlet pressure increases when rotating clockwise, and decreases when rotating counterclockwise. Adjust according to the required outlet pressure value.
- 5、 Temperature range: 0~80℃
- 6、 Pressure range: 0.1~0.5MPa

Precautions For Installation And Operation

1. Before installing the main valve and pipeline, please thoroughly remove the iron chips, stones, branches, plastic bags and other sundries in the pipeline.

2. Please be sure to install a filter at the front end of the main valve and a gate valve (butterfly valve) at the front and rear ends for future cleaning and maintenance.

3. The main valve shall be installed in the shade well, and there shall be enough space for technicians to adjust and maintain.

4. When installing the main valve, please pay attention to the arrow indicating the water flow direction on the valve body and follow the direction of installation.

5. It is recommended that the best installation method is to install the main valve on the horizontal pipeline outside the water tank with the valve cover facing upwards.

6. In winter, please pay attention to the thermal insulation of the valve. The ambient temperature shall not be lower than zero to prevent the valve from freezing.

Maintenance Instructions

1、 Basically, this valve does not need any maintenance, but the filter screen on the valve piping needs to be cleaned frequently, depending on the water quality, once every 2-3 months.

2、 Problem check:

- ① No pressure reduction
- ② The flow is slightly large, and the pressure drops quickly
- ③ Vibration
- ④ too much noise

Inspect according to the following procedures:

Problem	inspection method	reason	Solutions
No pressure reduction	1. Close GV2 and discharge water at the outlet. After a period of time, if the pressure is zero, the pilot valve is broken; 2. If the pressure is not zero, check whether there is bypass short circuit. 3. If there is no short circuit, the main valve is broken.		Service pilot valve
			Close bypass
			Maintenance of main valve
The flow is slightly large, and the pressure drops quickly		The main valve is blocked	Maintenance of main valve
Vibration		There is air in the pipeline	Install the exhaust valve and turn down the needle valve NV
too much noise		Too large differential pressure	Increase the number of pressure reducing valves and adopt multi-stage pressure reduction.

3、 Maintenance of main valve:

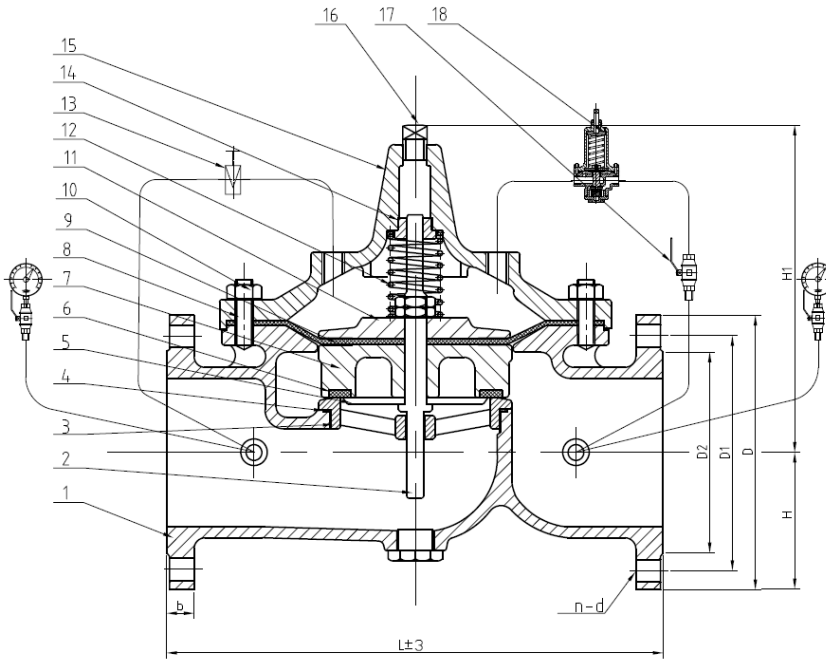
The hydraulic control valve itself is a water lubricated valve body, which does not require additional oil lubrication. If the internal parts of the main valve are damaged, please disassemble according to the following instructions, or go to the maintenance through our technicians. The general consumables in the main valve are diaphragm and O-ring.

The maintenance sequence is as follows:

- 1) Close the front and rear gate valves of the main valve.
- 2) Loosen the screw of the pipe fitting on the main valve bonnet to release the pressure in the main valve.
- 3) Remove all screws, including the necessary copper pipes and nuts in the control pipeline.
- 4) Remove the valve cover and spring.
- 5) Dismantle the pressure plate, diaphragm, valve clack, etc. without damaging the diaphragm and cup.

- 6) Take out the above things and check whether the diaphragm and seal ring are damaged. If not, do not disassemble the inner part by yourself.
- 7) Loosen the nuts on the pressure plate, disassemble them one by one, take out the diaphragm or seal ring, and replace it with a new diaphragm or seal ring.
- 8) Check the interior of the main valve, valve seat, etc. in detail to see if there is any damage or other debris inside the main valve, and remove them.
- 9) Assemble the replaced parts in reverse order and install the main valve. Note that the valve shall not be jammed.
- 10) Please refer to the installation precautions for reuse.

The main valve body diagram and parts list are as follows:



Item	Part	Material
1	Body	QT450
2	Valve Stem	20Cr13
3	Valve Seat	AISI304
4	Sealing	EPDM
5	Lower Platen	AISI304
6	Sealing	EPDM
7	Disc	20Cr13
8	Bolt	AISI304
9	Diaphragm	Reinforced Nylon +EPDM
10	Nut	AISI304
11	Upper Platen	AISI304
12	Spring	AISI304
13	Regulating Valve	AISI304
14	Bearing	H59
15	Bonnet	QT450
16	Cap	AISI304
17	Shut-off Valve	AISI304
18	Pilot Valve	AISI304

4、Maintenance of pilot valve:

The maintenance shall be carried out in the following order (it is unnecessary to remove the pressure reducing valve from the pipeline during maintenance)

Note: Before disassembling the pilot valve, please turn off all the pressure to the pressure reducing valve, but there is still pressure between the valves at both ends and the pressure reducing valve that is "locked" before continuing maintenance, please release the pressure.

- 1) Loosen the adjusting spring, remove the valve cover screws and remove the valve cover.
- 2) Remove the bottom cover, use a screwdriver to hold the valve groove, and use a wrench to remove the diaphragm fixing nut, pressure plate and diaphragm.
- 3) Remove the cartridge assembly.
- 4) Check all parts for damage and replace damaged parts.
- 5) Remove the filter screen cover, check whether the filter screen is blocked, and clean the filter screen regularly.



先导式法兰减压阀安装说明

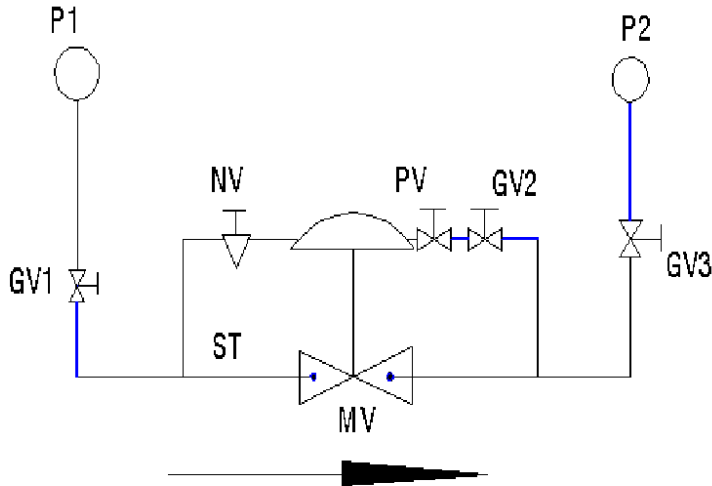
(型号: PRVDIN-F)



功能说明及使用手册

减压阀主要构成部分为主阀、减压先导阀、针阀等组成。

一、配管示意图如下：



符号说明：

MV：主阀

PV：减压先导阀

NV：针阀

GV：球阀

ST：过滤器

P：压力表

二、功能说明

- 1、本产品为一种隔膜型水力操作式阀体，安装于给水系统中，控制主阀出口压力为一定值。
- 2、本产品是通过调节减压先导阀（PV）将进口压力减至某一需要的出口压力，并依靠介质本身能量，使出口压力保持稳定即出口压力不因上游压力及流量变化而变化。
- 3、上图之 NV 针阀必须逆时针方向打开，否则此阀无效。GV2 球阀亦需要打开，否则无效。（出厂时，以上阀门均为打开状态）
- 4、正常操作时由减压先导阀自动调节出口压力，从而达到减压目的。需要重新设定出口压力时，在确定管道内水在流动的情况下，用活动扳手旋转导阀顶部螺杆，从上往下看，顺时针旋转时出口压力增加，逆时针旋转时出口压力减少，根据所需要出口压力值进行调节。
- 5、温度范围：0~80℃
- 6、压力范围：0.1~0.5MPa

安装操作注意事项

- 1.安装主阀与管线之前，请将管线内的铁屑、石块、树枝、塑料袋等杂物彻底清除。
- 2.请务必在主阀前端安装一只过滤器，前后端各安装一只闸阀(蝶阀)，以便将来清洗及维修。
- 3.主阀安装在荫井内，应有足够空间以便容纳技术人员调整及维护。
- 4.主阀安装时，请注意阀体上表示水流方向的箭头，遵循方向安装。
- 5.建议最佳的安装方式是将主阀安装在水箱外水平管线上，阀盖朝上。
- 6.在冬季请注意阀门的保温，环境温度不得低于零度，以防阀门冻裂。

维 护 说 明

1、本阀基本上不需要任何维护及保养，但阀门配管上的滤网需经常清洗，视水质情况 2~3 个月清洗一次。

2、问题检查：

- | | |
|---------|-----------------|
| (1)、不减压 | (2)、流量稍大，压力降低很快 |
| (3)、振动 | (4)、噪音太大 |

根据下列程序进行检视：

问题	检查方法	原因	解决措施
不 减 压	1.关闭 GV2, 出口放水, 一段时间后, 若压力为零, 则证明先导阀坏了;		维修先导阀
	2.若压力不为零, 检查是否有旁通短路。		关闭旁路
	3.若无短路, 则证明主阀坏了。		维修主阀
流量稍大 压力降低很快		主阀有塞阻	维修主阀
振动		管路内有空气	安装排气阀, 关小针阀 NV
噪音太大		压差太大	增加减压阀个数, 采用多级减压。

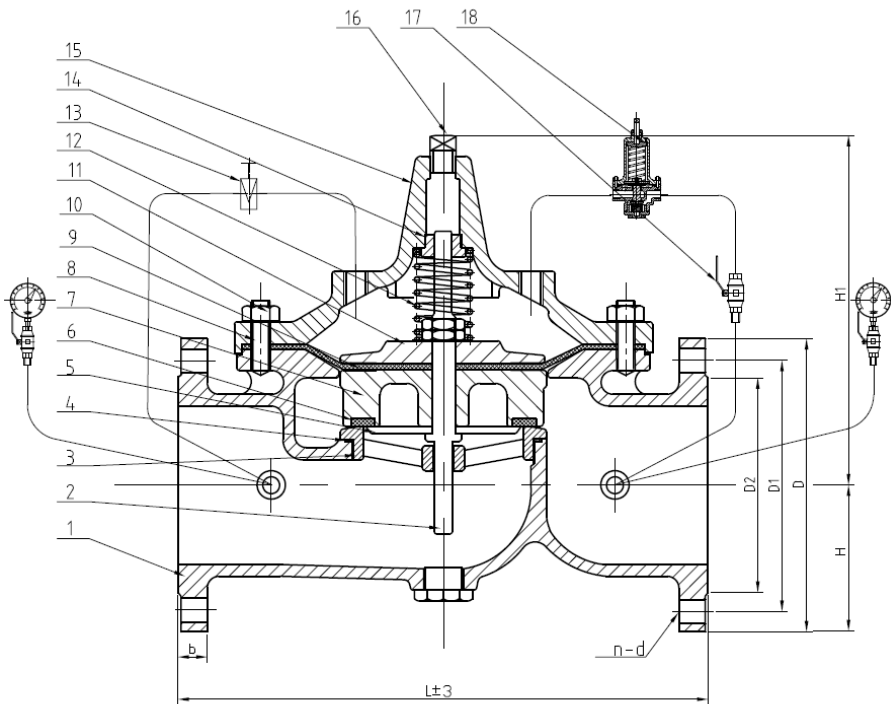
3、主阀检修：

水力控制阀本身是一种利用水自润式阀体，无须另加机油润滑，如遇主阀内部零件损坏时，请按下列指示进行拆卸，或通过本公司技术人员前往检修。主阀内一般消耗品为膜片及 O 型密封圈。

检修顺序如下：

- 1) 将主阀前后端闸阀关闭。
- 2) 将主阀阀盖上之配管接头螺丝松开，释放主阀内压力。
- 3) 将所有螺丝取下，包括控制管路中之必要铜管及螺帽。
- 4) 取下阀盖及弹簧。
- 5) 将压板、膜片、阀瓣等拆下，切勿损伤膜片及皮碗。
- 6) 将上述东西取出，检查膜片及密封圈是否损坏，如无损坏请勿再自行分解内部。
- 7) 将压板上之螺帽松脱，逐件将其分解，将膜片或密封圈取出，重新换上新的膜片或密封圈。
- 8) 详细检视主阀内部、阀座等，是否有损坏，或其他杂物在主阀内部，将其清出。
- 9) 依反向顺序将更换后之零件组合，把主阀装好，注意阀门不能有卡阻现象。
- 10) 请参考安装操作注意事项重新使用。

主阀阀体示意图及零件表如下：



序号	部件	材质
1	阀体	QT450
2	阀杆	20Cr13
3	阀座	AISI304
4	密封圈	EPDM
5	下压板	AISI304
6	密封圈	EPDM
7	阀瓣	20Cr13
8	螺栓	AISI304
9	膜片	强化尼龙+EPDM
10	螺母	AISI304
11	上压板	AISI304
12	弹簧	AISI304
13	调节阀	AISI304
14	轴承	H59
15	阀盖	QT450
16	塞头	AISI304
17	关断阀	AISI304
18	导阀	AISI304

4、先导阀检修：

检修请按下列顺序操作（维修时无须把减压阀从管线中拆下）

注意：在拆卸先导阀之前请把通向减压阀之压力全部关掉，但两端阀门和减压阀之间仍有压力被“锁住”继续维修之前，请把压力释放。

- 1) 拧松调节弹簧，拆下阀盖螺钉，去掉阀盖。
- 2) 拆下底盖，用螺丝刀抵住活门沟槽，用扳手配合拆下膜片固定螺母、压板、膜片。
- 3) 拆下阀芯组件。
- 4) 检查各零件有无损害，更换损坏零件。
- 5) 拆下滤网盖，检查滤网有无堵塞，定期清洗滤网。