

The following is the relevant introduction of the 500X pressure maintaining and relief valve:

Product Introduction

- **Working Principle:** The 500X pressure maintaining and relief valve is composed of a main valve, a pilot valve, a needle valve, a ball valve, and a pressure gauge, etc. When the pressure in the pipeline rises above the set pressure maintaining value, the pilot valve opens, and the pressure above the piston of the main valve is discharged through the pilot valve, causing the main valve to open and relieve the pressure, reducing the pressure in the pipeline to the set value. When the pressure in the pipeline drops below the set pressure maintaining value, the pilot valve closes, and the pressure above the piston of the main valve gradually increases, making the main valve close, thus keeping the pressure in the pipeline stable at the set pressure maintaining value.
- **Structural Composition:** The main valve is the main executing component of the valve, responsible for controlling the on-off of the water flow and the size of the flow rate. The pilot valve is used to sense the pressure change in the pipeline and control the action of the main valve according to the set value. The needle valve and the ball valve are used to adjust the flow rate and pressure of the pilot valve to achieve precise control. The pressure gauge is used to display the pressure in the pipeline.
- **Material Selection:** The valve body is usually made of materials such as cast iron, ductile iron, or cast steel, which have good strength and corrosion resistance. The sealing parts generally use materials such as rubber or polytetrafluoroethylene to ensure good sealing performance.
- **Scope of Application:** It is widely applied in fields such as high-rise buildings, urban water supply and drainage, fire protection systems, and industrial pipelines, etc., used to control the pressure in the pipeline, prevent damage to the pipeline and equipment caused by excessive pressure, and maintain the stability of the pressure in the pipeline when the pressure is too low.

Typical Installation Schematic Diagram

Generally, the 500X pressure maintaining and relief valve should be installed on a horizontal pipeline, and the inlet and outlet directions of the valve should be consistent with the water flow direction. A certain length of straight pipe sections should be installed upstream and downstream of the valve to ensure the stability of the water flow. At the same time, a pressure gauge should be installed near the valve to monitor the pressure in the pipeline. During installation, it is also necessary to avoid installing the valve in a position vulnerable to vibration or impact. Since no specific graphic is available, you can refer to the relevant valve installation manual or request a detailed installation schematic diagram from the manufacturer.

Maintenance and Troubleshooting

- **Maintenance**
 - **Regular Inspection:** Regularly check the sealing performance of the valve, the wear condition of components, and whether the control pipeline is normal to ensure the normal operation of the valve.
 - **Cleaning and Maintenance:** Keep the surface of the valve clean to prevent the accumulation of impurities. Regularly clean the filter to avoid blockage that may affect the performance of the valve.

- **Lubrication Treatment:** Appropriately lubricate the moving parts of the valve to ensure their flexible operation.
- **Troubleshooting**
 - **Inaccurate Pressure Control:** It may be that the set value of the pilot valve is inaccurate, and the spring pressure of the pilot valve or the opening degree of the needle valve needs to be readjusted. It may also be that there are impurities in the pipeline affecting the operation of the valve, so it is necessary to check and clean the impurities inside the pipeline and the valve.
 - **Valve Leakage:** Check whether the sealing parts are damaged, and replace the sealing parts if they are damaged. At the same time, check whether the connection parts of the valve are loose, and tighten the connection bolts if they are loose.
 - **The Valve Cannot Open or Close Normally:** Check whether the control pipeline is blocked or leaking, and repair or replace it in time if there is a problem. Check whether the components of the main valve and the pilot valve are damaged, and replace the corresponding components if they are damaged.

Performance Characteristics

- **Precise Pressure Control:** It can precisely control the pressure in the pipeline, stabilize the pressure within the set pressure maintaining value range, and effectively prevent the hazards caused by excessive or too low pressure to the pipeline system.
- **Reliable Sealing Performance:** Using high-quality sealing materials and advanced sealing structures, it ensures that the valve has good sealing performance in the closed state and prevents leakage.
- **Quick Response:** It has a quick response ability to the pressure change in the pipeline, and can open or close the valve in a timely manner to maintain the pressure stability.
- **Simple Structure:** The valve has a relatively simple structure, which is easy to install, maintain, and repair, reducing the use cost and maintenance difficulty.
- **Multifunctionality:** It can be used as a pressure maintaining valve to keep the pressure in the pipeline stable, and also as a relief valve to relieve the pressure in a timely manner when the pressure is too high. It has multiple functions and is suitable for different working condition requirements.

