The following is the content about the 800X differential pressure bypass balancing valve, including its product introduction, typical installation schematic diagram, maintenance and troubleshooting, as well as performance characteristics:

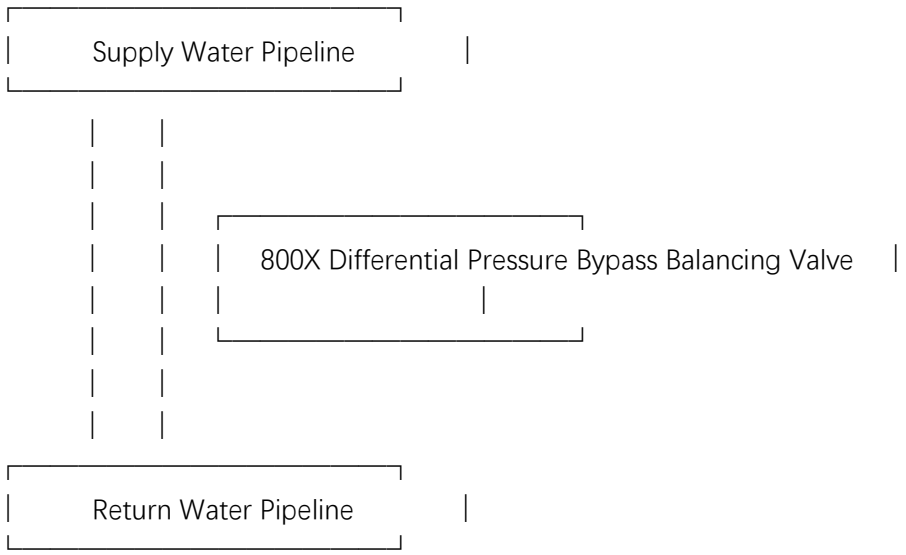
Product Introduction

The 800X differential pressure bypass balancing valve is a kind of hydraulic control device used in water systems such as air conditioning and heating systems. It is mainly composed of components such as the main valve body, pilot valve, diaphragm assembly, and spring.

- **Working Principle**: By sensing the change in the differential pressure between the supply and return water pipelines, it automatically adjusts the bypass flow to maintain the stability of the system differential pressure. When the change in the system load causes the differential pressure between the supply and return water to deviate from the set value, the pilot valve will control the opening degree of the main valve according to the change in the differential pressure, so that the bypass flow changes accordingly, thus ensuring that the system differential pressure is stably maintained within the set range.
- **Structural Features**: The main valve body is usually made of ductile iron or cast steel, which has good strength and corrosion resistance. The diaphragm assembly is made of high-quality materials such as rubber or polytetrafluoroethylene, which has good flexibility and sealing performance and can accurately transmit the pressure signal. The spring provides the restoring force to ensure that the valve can work normally under different working conditions.
- **Scope of Application**: It is widely applied in centralized air conditioning systems, district heating systems, industrial circulating water systems, etc., used to regulate the hydraulic balance of the system, ensure the stable operation of the system, and improve the energy utilization efficiency.

Typical Installation Schematic Diagram

plaintext



<-- The arrow on the valve indicates the water flow direction. Install the valve in the correct direction. -->

(Gate valves or butterfly valves should be installed on both sides of the balancing valve for easy maintenance and debugging. At the same time, pressure gauges should be installed on the supply and return water pipelines close to the valve for convenient monitoring of the differential pressure.)

Installation Key Points:

- The valve should be installed on a horizontal pipeline, and the direction of the valve body should be consistent with the water flow direction.
- The installation position should be convenient for operation and maintenance, and there should be enough space around it.
- The pressure gauges on the supply and return water pipelines should be installed in a position that is easy to observe, and the distance from the valve should not be too far.

Maintenance and Troubleshooting

- **Maintenance**
  - **Regular Inspection**: Regularly check the sealing performance of the valve to see if there is any leakage. Check whether the diaphragm assembly has problems such as aging and cracking, and replace it in time if there are any issues. At the same time, check whether the elasticity of the spring is good, and replace it if there is deformation or fatigue.
  - **Cleaning**: Keep the surface of the valve clean and remove dust and debris. Regularly clean the filter to prevent impurities from entering the inside of the valve and affecting the normal operation of the valve.
  - **Lubrication**: Apply an appropriate amount of lubricating grease to the moving parts of the valve, such as the valve stem and the valve core, regularly to reduce friction and ensure the flexible opening and closing of the valve.
  - **Pressure Test**: Regularly conduct a pressure test on the valve to check its working performance under different pressures and ensure that the valve can adjust the differential pressure normally.
- **Troubleshooting**
  - **Valve Leakage**: If the main valve body leaks, it may be due to damaged seals or defects such as sand holes in the valve body. Check the wear condition of the seals and replace the seals if they are damaged. For defects such as sand holes in the valve body, methods such as welding can be used for repair. If the pilot valve leaks, check whether the valve core and valve seat of the pilot valve are worn, and grind or replace them if there is wear.
  - **Unstable Differential Pressure Control**: It may be caused by a fault in the pilot valve, damage to the diaphragm, or insufficient elasticity of the spring. Check the sensitivity of the pilot valve, and clean and repair it if there is

blockage or jamming. Check whether the diaphragm is cracked, and replace the diaphragm if it is cracked. Check the elasticity of the spring, and replace the spring if the elasticity is insufficient.

- **The Valve Cannot Open or Close Normally**: It may be due to jamming of the valve stem, blockage of the valve core, or a fault in the actuator. Check whether the valve stem is deformed or rusted, and repair or replace it if so. Clean the impurities on the valve core to ensure that the valve core can move freely. Check whether the power supply, control signal, etc. of the actuator are normal, and troubleshoot and repair the corresponding problems if there are any issues.

Performance Characteristics

- **Precise Differential Pressure Control**: It can accurately control the differential pressure between the supply and return water according to the actual needs of the system, keep it within the set range, and is not affected by the change in the system flow rate, effectively improving the stability and comfort of the system.
- **Automatic Adjustment Function**: It has the function of automatically sensing the change in differential pressure and adjusting it without manual intervention, and can adapt to different working condition changes, greatly improving the operation efficiency and management level of the system.
- **Good Flow Characteristics**: There is a good linear relationship between the opening degree of the valve and the flow rate, which can realize the precise adjustment of the bypass flow, thus ensuring the hydraulic balance of the system.
- **High Reliability**: Using high-quality materials and advanced manufacturing processes, the valve has a solid and durable structure, and key components such as the diaphragm and spring have stable performance, which can operate stably for a long time and reduce the frequency of maintenance and replacement.
- **Remarkable Energy-saving Effect**: By maintaining the stability of the system differential pressure, unnecessary energy waste is avoided, the energy utilization efficiency of the system is improved, and the operation cost is reduced.