The following is the relevant information about the LH45X - 16 flow-limiting check valve: **Product Introduction**

- **Structural Principle**: It adopts a pilot valve and main valve structure, featuring a compact design and light weight. Based on the head at the designed operating point of the water pump, the pilot valve automatically detects and controls the actual operating head of the water pump to limit the working flow rate of the pump and the load on the motor.
- **Purpose**: It is mainly used in systems where multiple pumps are connected in parallel and the flow rate is adjusted by changing the number of operating pumps. It is installed at the outlet of the water pump. When a single pump is started or not all the pumps are operating at the designed capacity, it limits the flow rate of the operating pumps, enabling the pumps to operate at a higher efficiency level.
- Working Process: A control operating head is set. When the operating head of the water pump is lower than the control head, the valve starts to close, increasing the actual operating head. When the operating head of the water pump is higher than the set head, the valve fully opens, and the resistance of the valve is extremely low.

Typical Installation Schematic Diagram plaintext



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

(Gate valves or butterfly valves should be installed on both sides of the flow - limiting check valve for easy maintenance and debugging. At the same time, a pressure gauge can be installed on the downstream pipeline close to the valve for convenient monitoring of the pressure.)

Installation Key Points:

- The flow direction of the medium should be consistent with the direction indicated by the arrow on the valve body.
- The external pressure guiding device has passed the pressure test before leaving the factory. Do not damage the pressure guiding device during installation. The 1/2 pipe connector on the valve should be installed at the inlet of the water pump.
- It can be installed horizontally or vertically, but horizontal installation is recommended.
- The pipeline connection flanges on both sides of the valve should be aligned with the valve flanges. After adding the sealing gasket, the flanges should be tightly attached. Do not force the connection to avoid damaging the valve.

Maintenance and Troubleshooting

- Maintenance
 - Depending on the water quality, the outlet pressure value should be checked regularly. When the outlet pressure is lower than the set value, the filter should be opened to remove dirt.
 - After operation, if the main valve fails to control properly, it may be due to unclean water quality, which may damage the sealing ring or diaphragm of the pilot valve or the main valve, or block the control pipe or the pilot valve. In this case, timely inspection, cleaning, and replacement are required.

Troubleshooting

- **The valve does not close tightly**: There may be impurities, wear, or damage on the sealing surface. Clean the impurities on the sealing surface, check the wear condition, and replace the sealing parts if they are damaged.
- **The flow limiting function fails**: Check whether the pilot valve is blocked or damaged, and whether the pressure - regulating valve is working properly. Clean the blockage in the pilot valve, repair or replace the damaged parts of the pilot valve, and debug the pressure - regulating valve to make it work normally.
- Water hammer phenomenon: Check whether the slow closing device is working properly, such as whether the needle valve is blocked or damaged. If there is a problem, clean or replace the needle valve and adjust the slow closing time to eliminate the water hammer phenomenon.

Performance Characteristics

- It allows the water pump to operate within the high efficiency zone and restricts the pump from running at a high flow rate and low efficiency.
- It has a micro resistance and slow closing check function. There is no water hammer phenomenon when the pump stops, which can significantly reduce the water hammer impact.
- It prevents the water pump from overloading and burning the motor due to exceeding the rated current, and has a certain energy saving effect.
- It has a stepless head adjustment function. The adjustable range of the limiting head is 0.1 0.6 MPa, and it is set at 0.1 MPa when leaving the factory.
- It can adjust the medium temperature between 0 150 °C.

