Excess Flow Check Valve / Hydraulic Fuse

Installation, Operation and service instructions

Description

The purpose of the Excess Flow Check Valve is to prevent spillage and leakage from any ruptured instrument, pipe connection or fluid line downstream from a valve. The valve will remain open as long as the specified (design) maximum flow rate in the "controlled flow" direction is not exceeded. This flow will permit the normal operation of the instruments located downstream from the valve.

The valve poppet will close when the maximum flow rate in the "controlled flow" direction is exceeded. The poppet is designed to permit a small amount of pressure to pass through the valve during the "closed position" phase. This leak rate allows gradual pressure build up downstream of the valve once the cause of rupture or other pressure loss has been corrected. Zero leak rate to pass through the valve during the "closed position" is also available upon request. The flow in the "free flow" direction is not controlled or restricted.

Installation

The Excess Flow Check Valve may be installed in any position in the fluid line. The operation of the valve is not gravity influenced.

The valve shall be installed in the instrument fluid lines (or pipe lines) with the "controlled flow" arrow pointing in the downstream direction. The valve has been verified for maximum flow and leak rate flow; therefore, the internal valve parts such as spring and poppet are not to be interchanged with parts from other valves.

It is not necessary to disassemble the valve prior to mounting and welding in the instrument line.

Startup

Upon completion of installation the pressure should be applied to the system gradually. A rapid application of pressure during the initial startup may cause the poppet to close because the maximum flow rate will most likely to be exceeded. If the poppet closes the built-in leak rate will usually permit a gradual pressure equalization across the valve and permit normal operation of the equipment and instruments located downstream of the valve.

Operating Procedure

With the valve installed as described above, pressure is then fully transmitted from the pressure source through the valve and instruments. As long as the maximum flow rate through the valve is not exceeded, the poppet will not close.

In the event of poppet closure due to rupture, the poppet will automatically reopen as soon as the differential pressure across the valve approaches zero.

For valves with Zero leak type poppet, the poppet will not reopen in the event of a poppet closure unless pressure is reduced upstream.

Service

The valve will provide safe and reliable service under standard operating conditions over the life of the system.