

PRESSURE RELIEF VALVE

DESCRIPTION

A spring loaded SELF-SETTING/SELF-ACTUATING SANITARY PRESSURE RELIEF VALVE, that is preset and actuated solely and directly by the upstream static line pressure. The Valve combines quick and easy cleaning and assembly with low BLOWDOWN and ACCUMULATION. The OPENING RELIEF PRESSURE is set at the factory with replaceable pressure setting rings that range from 45 to 100 PSI (120 PSI is available). The relief capacity of 90 Gallons/minute can be dumped (alarmed mode), or recirculated depending upon the users requirements. Valve may be installed in any position, but vertical is recommended for uniform wear.

How the Valve Works

The Sleeve (2) telescopes into the body (1) under increasing line pressure. When the pressure setting Ring (4) contacts the Body's inside shoulder, the valve has reached its pre-set pressure. Any additional pressure will open the plug (3) to relieve the excess pressure. The plug will reset itself after sufficient pressure has been relieved.

DEFINITIONS OPENING RELIEF PRESSURE

The pressure at which the valve starts to open and drip. Opening relief pressure should be set high enough (approximately 20% above operating pressure) to prevent dripping due to normal pressure fluctuations in the system (such as opening and closing of diverting valves). Systems subject to higher than normal pressure surges should have an opening relief pressure level approximately 30% above the operating pressure.

BLOWDOWN

The amount of pressure (PSI), beyond the opening relief pressure to attain positive closure. Blowdown of 10 to 20% is typical for a 2" QST set at 90 PSI.

ACCUMULATION

The amount of additional pressure (PSI), beyond the opening relief pressure level required to open the valve for a given relief capacity. Accumulation of 20 to 30% is typical for a 2" QST set at 90 PSI to reach its 90 GPM limit.

WEEPING/DRIPPING

The small amount of liquid that leaks from the valve upon system start up is due to line pressure fluctuations.

WHEN WEEPING/DRIPPING OCCURS

CHECK

- 1 Inspect the PLUG and SEAT for dents and scratches. Reliable seating upon protecting these precision machined and lapped surfaces.
- 2 Look for "O" Ring damage, under lubrication, or inside body wall damage, which results in excessive friction between "O" Ring and body wall. This allows the PLUG to become unseated at lower pressures, but it resets after system has reached operating pressure.
- 3 Spring relaxation is present if the spring acquires a permanent set (spring becomes shorter). This reduces the precompression necessary to prevent the valve from opening at a lower pressure.

PRESSURE FLUCTUATIONS DURING OPERATION

- 4 When the PLUG becomes unseated due to the opening relief pressure being momentarily exceeded, the valve will drop until the systems, pressure drops to BLOW DOWN to reset the PLUG.

SOLUTION

Careful handling while removing, cleaning and reinstalling reduces the risk of damage to the plug and seat, which must be returned to the factory for repairs.

Replace "O" Ring lubricate "O" Ring return to factory for repair or replacement.

This condition is easily verified by inspecting the valve before installation. When assembled, the sleeve should extend beyond valve body $\frac{1}{16}$ " or more, if not, then weeping may occur. Return valve to factory for repair.

Reduce magnitude of pressure fluctuation in system or increase opening relief pressure (approximately 30% above operating pressure)