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PRV

Waterline Pressure Reducing Valve

Specialty Pressure Reduction Valve for use in the water filter and beverage industry

The *Waterline PRV* is a very economical unit where pressure limiting, flow restriction or reduction in water hammer effect is required. It can be used in- line to filter systems, Reverse Osmosis and Ultra Violet units, post-mix, icemakers and coffee machines. Designed with industry standard ¼" (6.25mm) OD connecting spigots, the Waterline PRV can be placed directly into Quick-Fit connectors now incorporated into many filter bodies. Alternatively, union Quick-Fit connectors can be used to place the unit anywhere in-line. The Waterline PRV comes with mounting hooks.

Outlet pressure is factory pre set at 350 Kpa (50 psi). Any rupture of the red seal voids warranty and no liability will be accepted.

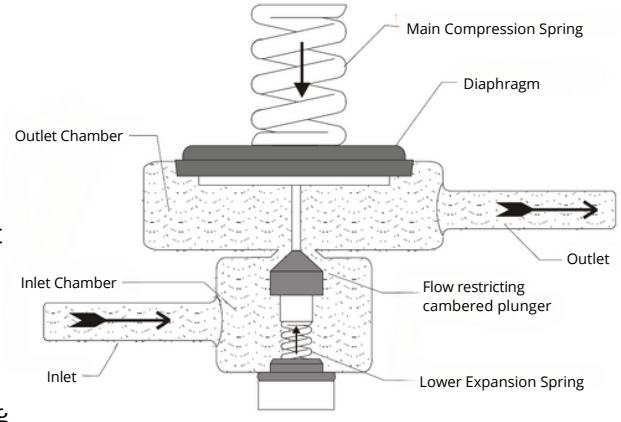
How the Waterline PRV Works

Water flow through the unit is controlled by the position of the tapered plunger in the neck between the inlet and outlet chamber.

The plunger connects to the diaphragm which has the main compression spring applying pressure from above. Outlet water pressure is set by the amount of tension forced onto the diaphragm by the spring.

When incoming water pressure rises above the set pressure, it will start to overcome the downward tension of the main spring and lift the diaphragm upwards. This in turn allows the lower expansion spring to push the plunger up.

This immediately restricts the water flow to the upper chamber allowing the main compression spring to reassert some downward tension and this combination effectively controls the outlet pressure. The whole effect is self governing.



Not to scale and not representative of actual layout

Water Hammer

Water hammer can damage or burst pipes, valves, storage tanks and filter housings. Hammer occurs when water moving at high velocity is suddenly stopped (e.g. washing machine & dishwasher solenoids, lever taps). Unlike air, water is not compressible so the energy stored in the column of water can't simply be dissipated by momentarily "squashing" up. The pressure surge travels back and forth along the pipes trying to disperse the energy where it can and this is where the damage is sustained if there is no "give" in the system. While lowering the water pressure will lower the velocity of the water and thus reduce water hammer effects, the damaging energy surge can still occur at quite low pressures.

Waterline PRV

The Waterline PRV has an expansion chamber and no check valve/s and therefore substantially reduces potential water hammer damage to filters by:

- expanding the upper chamber of the PRV (the rubber diaphragm has air on the other side of it) thus dissipating of the energy surge.
- allowing the pressure surge to travel right through and dissipate any remaining energy throughout the whole house.

Many other different types of static pressure limiting valves also incorporate dual check valves. When the pressure surge from a sudden stoppage of water flow travels back to the limiting valve, the check valves halt the movement and all the energy has to be dissipated within the short distance from tap to valve; this is where damage can be sustained to filter housings.