

The function of a pressure relief valve

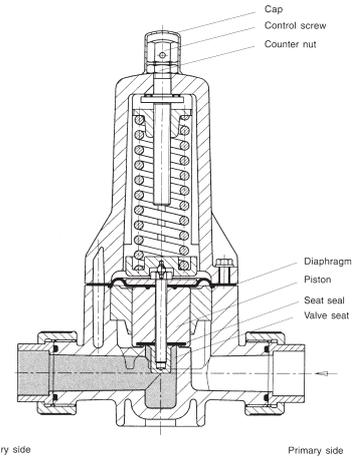
A pressure relief valve is most often used to protect a system from over-pressurisation, but it can also be used to maintain a constant upstream pressure or even as a non-return valve in certain installations.

Not normally installed as an in-line valve, it only opens when the system pressure exceeds the pressure set against the diaphragm of the valve. When this happens, the excess pressure forces the valve piston off its seat, compressing the spring and allowing fluid to flow through the valve body to discharge. Damping at the valve piston suppresses vibration and fluttering.

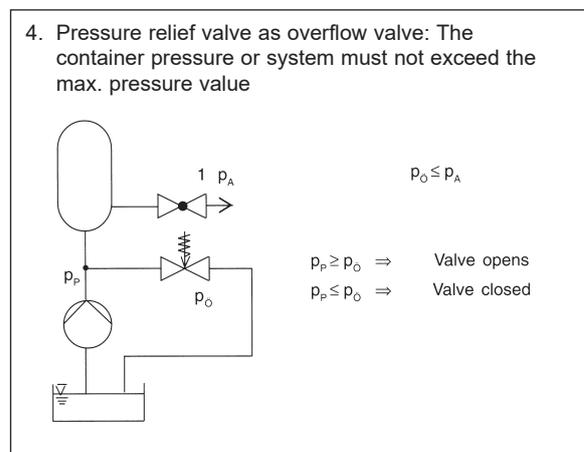
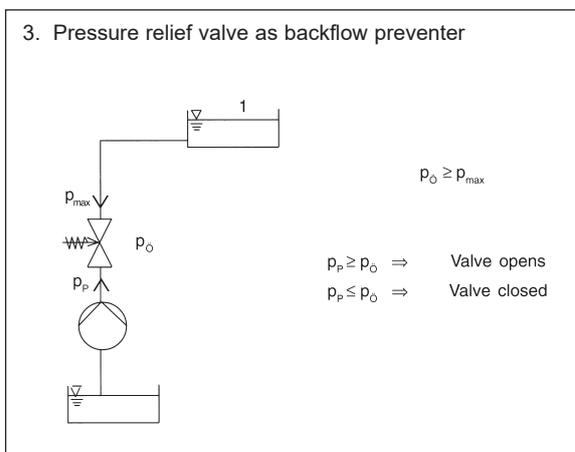
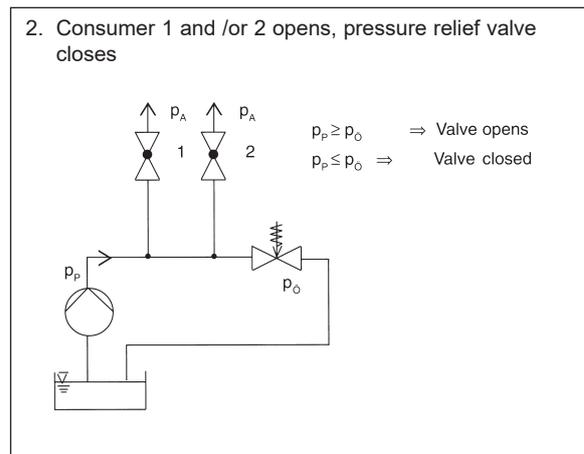
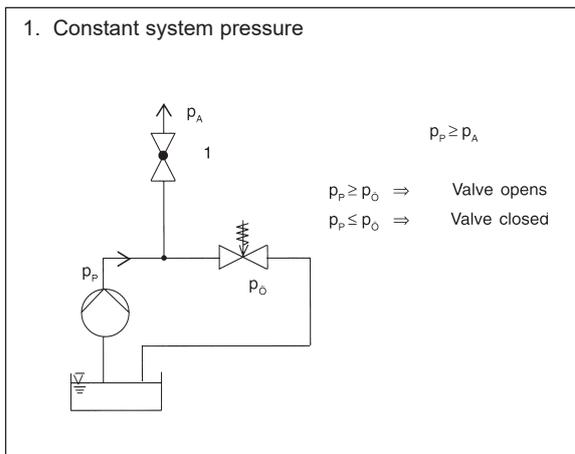
The pre-formed diaphragm allows full opening of the valve whilst separating the fluid in the lower body from the bonnet and therefore the atmosphere. The seal is additionally secured by crimped seal O-rings at the diaphragm.

When the system pressure falls back to below the set pressure, the spring forces the piston back into the seat, closing the valve.

Pre-setting or re-adjustment of the valve set pressure is made by removing the protective cap and by setting the control screw. The counter nut is tightened after final adjustment. When used with neutral fluids, many of the pressure relief valves can be fitted with a pressure gauge if required.



Applications for Pressure Relief Valves



X = valve opens
Y = valve closed
pmax = max. pressure
pA = working pressure
pP = pump pressure
pO = opening pressure