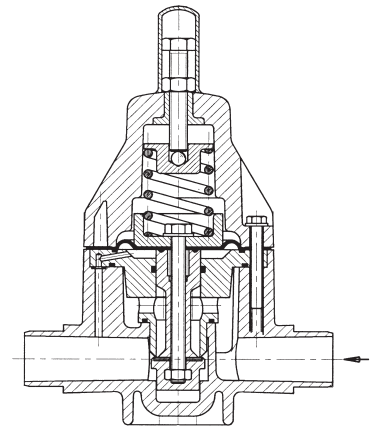


The function of a pressure reducing valve

A pressure reducing valve is installed in-line. It is responsible for maintaining the downstream line pressure to the pressure set at the valve.

The valve works by responding to changes in the downstream pressure. For example, assume that there are normally two open valves downstream from the pressure regulator. When one is closed, the back pressure will increase. As this happens, the pressure reducing valve would close down to maintain the downstream pressure. When the valve is re-opened the pressure reducing valve would also open up again until the set pressure was reached.

Under operating conditions the pressure reducing valve is always open which means that it is balanced between the inlet pressure (primary side) and the lower outlet/working pressure. At any rise of working pressure at the valve outlet a pressure compensation via the control bore takes place at the area below the diaphragm. The higher working pressure activates the large diaphragm and lifts the piston against the spring force. The flow reduces and the working pressure drops until the balanced condition is reached again. When the working pressure drops this procedure is reversed. The spring force opens the valve seat against the lower pressure force below the diaphragm. The flow rises until the balanced condition is reached again.

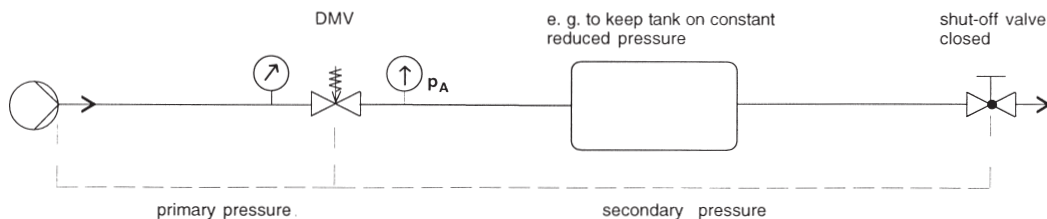


Pre-setting or re-adjustment of the valve set pressure is made by removing the protective cap and by setting the control screw. The counter nut is tightened after final adjustment. When used with neutral fluids, many of the pressure reducing or relief valves can be fitted with a pressure gauge if required.

Applications for Pressure Reducing Valves

working condition 1

If shut-off valve opens the working pressure p_A drops by an opening pressure p_O



working condition 2

If shut-off valve closes the working pressure p_A rises by the a closing pressure p_S

