ISO 9001:2008 & ISO14001:2004
Registered Company

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The FEMA Proportional Pressure Control (PPC) valve is used in complex hydraulic valve systems to control pressure proportionally to input current. It is typically use as a pilot to control a secondary valve, such as a vent-able relief or pressure reducing valve.

SCHEMATIC OF PPC MATED TO RELIEF VALVE

1. Virtually all pilot operated relief valves have what is called a vent or remote pilot port. This port is used in certain systems to remotely control the pilot pressure. This is accomplished by setting the manual adjust handle at a pressure higher than the working pressure. Then the Pc control pressure is controlled externally by metering the flow through some external component.

2. The pressure in the control cavity Pc is balanced against supply pressure on the other side of the piston in manual applications. Pc is controlled by the preload on the pilot poppet, which is set by adjusting the manual adjust handle.

3. When Pc is increased, the piston is forced down to close off the main flow to the tank. This raises the system pressure until it balances Pc and the system is again in equilibrium.

4. If Pc is reduced to zero pressure the supply pressure will still be about 80 PSI, which is the pressure necessary to balance against the bias spring. Thus, the supply pressure always has a differential of about 80 PSI higher than Pc.

5. This fixed differential of supply pressure over the Pc control pressure creates the pilot flow through the fixed orifice.

6. The FEMA PPC is simply plumbed to the remote pilot port and used as an electrically modulated device to meter the pilot flow to tank.