

Fluid Equipment Co., Inc. *25 Years / 2000*

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Article 4 – Basic Modulating Pilots

An Automatic Control Valve Pilot can be many different devices; such as Solenoid Valves, Check Valves, Needle Valves, etc.

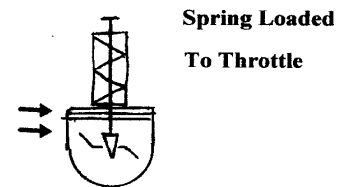
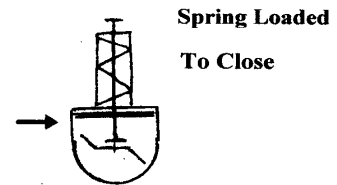
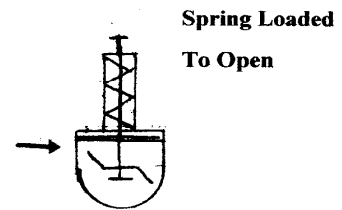
We show here the (3) commonly used Spring Loaded Types.

(To Open) The spring is trying to open the pilot. The pressure sense line is usually tapped under the diaphragm to appose the spring. This arrangement is mostly used for “Pressure Reducing” valves.

(To Close) The spring is trying to close the pilot. The pressure sense line is usually tapped under the diaphragm to appose the spring. This arrangement is mostly used for “Pressure Relief / Sustaining” valves.

(To Throttle) The spring is trying to throttle the flow. Pressure Sense lines are tapped above and below the diaphragm. This arrangement is for Rate-of-Flow control; ie, gallon per minute.

These are the Modulating Types. There are a number of others that are 2-way ported or 3-way ported, that don't modulate. These are mostly seen on Altitude Valves, Pump Control Valves, Float Valves, etc.



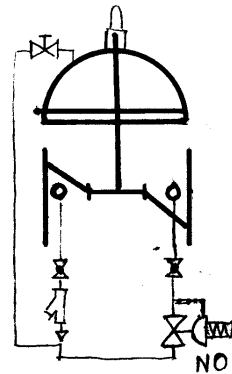
Automatic Answer

**Article 5 – Down
Stream Pressure Control**

The first schematic shows a Pilot Operated Pressure Reducing Valve. The Pilot is Spring Loaded to Open (NO).

When the Pilot is open the Main Valve is open. The Spring Setting (pressure setting) is adjustable. Different springs are installed to provide different pressure ranges.

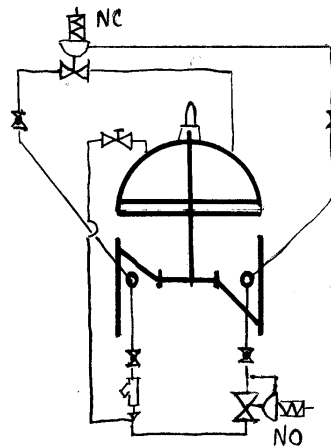
The sense line to the pilot is connected on the downstream side. If you start with zero pressure and then turn a pump on, the valve is initially full open. As water passes through the valve, and the down stream pressure raises up to the spring setting, the valve will begin to close, and then hold the downstream pressure to the spring setting. This valve should not be put on the end of a pipeline.



If your pressure changes are rapid, such as from a pump start, then you should consider the second schematic, because the pressure reducing pilot is relatively slow acting.

Here we have added a pilot that is Spring Loaded to Close (NC). Its' sense line also goes to the downstream side. It, however, will open when the downstream pressure reaches its' setting, and then it will quickly keep the main valve from allowing too much pressure to go downstream. It does this by quickly putting water into the main valve cover, above the main diaphragm

This arrangement is called Pressure Reducing / Surge (Surge here not to be confused with Surge Relief or Surge Anticipation)



Article 6 will be Rate-of-Flow Control

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