Pressure Reducing Valve
Chamber Design and Operation

2015 Clean and Safe Drinking Water Workshop

Model 90-01

Automatic Control Valves
Pressure Reducing Valve Chamber Design and Operation

**Purpose:**

To Provide a **Constant** downstream pressure **Regardless** of any change in Upstream pressure or flow conditions.
Automatic Control Valves

Components found in a Pressure Reducing Valve Chamber

- Isolation Valves – Typically Gate or Butterfly Valves
- Pipeline Strainer installed before the Control Valves
- Pressure Gauges – Inlet and Outlet Side of the Control Valve
- Pressure Reducing Valve(s)
- Pressure Relief Valve
Typical Layout of a Pressure Reducing Valve Chambers
Setting up a Pressure Reducing Valve Chamber

1. Set the Pressure on the Low Flow Valve at desired set point. In this case, 65 PSI.
2. Set the Pressure on the Fire Flow Valve at least 5 PSI LOWER than the set point of the Low Flow Valve.
3. Set the Pressure on the Relief Valve Pilot 10-15% higher than the Low Flow Valve set point.

Flow Direction

Low Flow or Normal Flow Pressure Reducing Valve

Set the Fire Flow Valve a minimum of 5 PSI LOWER than the Low Flow Valve. In this case 60 PSI.
Adjusting the CRD

Automatic Control Valves
Adjusting the Pressure Reducing Valve

- Some flow is required
- Clockwise to increase downstream pressure
- Counter-Clockwise to decrease downstream Pressure
- Make all adjustments slow!
  - Allow valve time to respond
- Watch your downstream gauge!
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Benefits of having a Low Flow and Fire Flow Valve in your Pressure Reducing Valve Chamber

- Valves are sized to handle a more specific flow range. This keeps the valves operating at premium efficiency and keeps the system velocity in check.

- You have a built in Redundancy which allows for continuous service to your distribution system if you need to service a valve.
Pressure Reducing Valve Chamber Design and Operation

Thank you!