The Model 108-2 has a wide range of applications: anywhere a system must be protected from pressures that are too high (relief) or too low (sustaining).

Typical examples include:
- Pump systems
- Municipal distribution systems
- Irrigation systems

**OPERATION**

The normally closed, spring-loaded pilot, sensing upstream pressure, responds to changes in pressure and causes the main valve to do the same. The net result is a constant modulating action of the pilot and main valve to hold the upstream pressure constant. The pilot system is equipped with a closing speed control that fine tunes the valve response to the system variables.

**SERIES FEATURES**

- **Relief Valve**: Limits inlet pressure by relieving excess pressure
- **Pressure Sustaining**: Prevents inlet pressure from dropping below a predetermined minimum
- Operates over a wide flow range
- Inlet pressure is adjustable with single screw
- Quick opening and adjustable closing speed
- Can be maintained without removal from the line
- Factory tested and can be pre-set to your requirements

**COMPONENTS**

The Model 108-2 consists of the following components, arranged as shown on the schematic diagram:

1. Model 65 Basic Control Valve
2. Model 1330 Pressure Relief/Back Pressure Pilot
3. Model 126 Ejector
   - Fixed orifice pilot system supply restrictor
4. Model 141-3 Flow Control Valve
   - Adjustable closing speed control
5. Model 159 Y-strainer
   - Protects pilot system from dirt/debris
6. Model 141-4 Isolation Ball Valves
7. Model 155 Visual Indicator (Optional)

**SIZING**

Pressure sustaining valves and pressure relief valves that operate frequently should be limited to a maximum velocity of 7.6 m/sec. Pressure relief valves that operate intermittently may be extended to 13.7 m/sec.

Definitive sizing information can be found in the OCV Catalog, Series 108 section and Engineering section Performance Charts. Consult the factory for assistance and a copy of the OCV Valve Master Sizing program.

**RECOMMENDED INSTALLATION**

- Install the valve with adequate space above and around the valve to facilitate servicing. Refer to the Dimension table.
- Valve should be installed with the bonnet (cover) at the top, particularly 8” (DN200) and larger valves, and any valve with a limit switch.
- Shut-off valves should be installed upstream and downstream of the control valve. These are used to isolate the valve during startup and maintenance.
- Install a pressure gauge upstream of the valve to enable adjustment to the required pressure setting. This gauge may be installed in the upstream side port of the valve body.

**END CONNECTIONS**

<table>
<thead>
<tr>
<th>Size</th>
<th>Ductile Iron</th>
<th>Steel/Stn STL</th>
<th>Bronze</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threaded</td>
<td>44.1 bar</td>
<td>44.1 bar</td>
<td>34.5 bar</td>
</tr>
<tr>
<td>Grooved</td>
<td>20.7 bar</td>
<td>20.7 bar</td>
<td>20.7 bar</td>
</tr>
<tr>
<td>150# Flanged</td>
<td>17.2 bar</td>
<td>19.6 bar</td>
<td>15.5 bar</td>
</tr>
<tr>
<td>300# Flanged</td>
<td>44.1 bar</td>
<td>51.0 bar</td>
<td>34.5 bar</td>
</tr>
</tbody>
</table>

**FLOW 7.6 M/SEC M³/HR**

<table>
<thead>
<tr>
<th>Size</th>
<th>32-40</th>
<th>50</th>
<th>65</th>
<th>80</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>400</th>
<th>600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow 7.6</td>
<td>26-36</td>
<td>59</td>
<td>85</td>
<td>131</td>
<td>227</td>
<td>511</td>
<td>886</td>
<td>1392</td>
<td>1989</td>
<td>2409</td>
<td>3125</td>
<td>7102</td>
</tr>
</tbody>
</table>

**FLOW 13.7 M/SEC M³/HR**

<table>
<thead>
<tr>
<th>Size</th>
<th>48-64</th>
<th>104</th>
<th>148</th>
<th>227</th>
<th>409</th>
<th>909</th>
<th>1591</th>
<th>2500</th>
<th>3636</th>
<th>4318</th>
<th>5682</th>
<th>12727</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow 13.7</td>
<td>48-64</td>
<td>104</td>
<td>148</td>
<td>227</td>
<td>409</td>
<td>909</td>
<td>1591</td>
<td>2500</td>
<td>3636</td>
<td>4318</td>
<td>5682</td>
<td>12727</td>
</tr>
</tbody>
</table>

**MAX. PRESSURE**

Cavitation Note: Relief valves by their application are subject to pressure differentials that may induce cavitation. When these conditions exist, it may be only on an intermittent basis, causing minimum concern for valve deterioration. Charts indexing only inlet and outlet pressures do not address the complexity of this phenomenon. OCV can assist you in validating your application.

**TOLL FREE 1.888.628.8258 ● phone: (918)627.1942 ● fax: (918)622.8916 ● 7400 East 42nd Place, Tulsa, Ok 74 145**

**email: sales@controlvalves.com ● website: www.controlvalves.com**
**SIZES**

GLOBE/ANGLE

- Screwed Ends: 1 1/4" - 3" (DN32-DN80)
- Grooved Ends: 1 1/2" - 4" (DN40-DN100)
- Flanged Ends: 1 1/4" - 24" (DN32-DN600) (globe); 1 1/4" - 16" (DN32-DN400) (angle)

**TEMPERATURE RANGE**

(Valve Elastomers)

- Buna-N: 0° C - 82° C
- Viton: 0° C - 204° C
- EPDM: 0° C - 149° C

**SPRING RANGES** (inlet setting)

- .3 bar - 2.1 bar, 1.4 bar - 5.5 bar, 4.5 bar - 12.4 bar, 6.9 bar - 20.7 bar

**MATERIALS**

Consult factory for others.

- **Body/Bonnet:** Ductile Iron (epoxy coated), Carbon Steel (epoxy coated), Stainless Steel, Bronze, Others available (consult factory)
- **Seat Ring:** Bronze, Stainless Steel
- **Stem:** Stainless Steel
- **Spring:** Stainless Steel
- **Diaphragm:** Nylon Reinforced, Buna-N, Viton, EPDM
- **Seat Disc:** Buna-N, Viton, EPDM
- **Pilot:** Bronze, Stainless Steel
- **Other pilot system components:** Bronze/Brass, All Stainless Steel
- **Tubing & Fittings:** Copper/brass, Stainless steel

**SPECIFICATIONS** (Typical Water Application)

The <pressure relief> <pressure/sustaining> valve shall function to <prevent main line pressure from exceeding a predetermined maximum> <prevent the upstream pressure from falling below a predetermined minimum.>

**DESIGN**

The valve shall be a single-seated, line pressure operated, diaphragm actuated, pilot controlled globe valve. The valve shall seal by means of a corrosion-resistant seat and a resilient, rectangular seat disc. These, and other parts, shall be replaceable without removing the valve from the line. The stem of the main valve shall be guided top and bottom by integral bushings. Alignment of the body, bonnet and diaphragm assembly shall be by precision dowel pins. The diaphragm shall not be used as a seating surface, nor shall the pistons be used as an operating means. The pilot system shall be furnished complete and installed on the main valve. It shall include a closing speed control, Y-strainer and isolation ball valves. The <pressure relief> <pressure/sustaining> valve shall be operationally and hydrostatically tested prior to shipment.

**MATERIALS OF CONSTRUCTION**

The main valve body and bonnet shall be ductile iron per ASTM A536, Grade 65-45-12. All ferrous surfaces shall be coated with 4 mils of epoxy. The main valve seat ring shall be bronze. Elastomers (diaphragms, resilient seats and O-rings) shall be Buna-N. Control pilots shall be bronze. The closing speed control and isolation ball valves shall be brass, and control line tubing shall be copper.

**OPERATING CONDITIONS**

The <pressure relief> <pressure/sustaining> valve shall be suitable for controlling the inlet pressure to a <maximum> <minimum> at <X> bar at flow rates ranging from <X to X> M³/HR.

**ACCEPTABLE PRODUCTS**

The <pressure relief> <pressure/sustaining> valve shall be a <size > Model 108-2, <globe pattern, angle pattern>, with <150# flanged, 300# flanged, threaded, grooved> end connections, as manufactured by OCV Control Valves, Tulsa, Oklahoma, USA.