The Model 108-2HP 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

**SERIES FEATURES**

- Relief Valve: Limits inlet pressure by relieving excess pressure
- Pressure Sustaining: Prevents inlet pressure from dropping below a predetermined minimum
- Special pilot for set points of 200-740 psi
- Pilot is stainless steel
- Operates over a wide flow range
- Inlet pressure is adjustable with single screw
- Quick opening and adjustable closing speed
- Available with optional anti-cavitation orifice plate
- Can be maintained without removal from the line
- Factory tested and can be pre-set to your requirements

**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’s response to the system variables.

**COMPONENTS**

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

1. Model 65 Basic Control Valve
2. Model 2400 Pressure Relief/Back Pressure Pilot
3. Model 126 Ejector
4. Model 141-3 Flow Control Valve
5. Model 159 Y-strainer
6. Model 141-4 Isolation Ball Valves (optional)
7. Model 155 Visual Indicator (optional)
8. Anti-Cavitation Orifice Plate (optional)

*108-2HP valves in pressure relief service will likely cavitate. To protect against damaging effects of this phenomenon, OCV offers an anti-cavitation orifice plate, integrally installed in the valve’s downstream flange. Please consult factory with pressure and flow conditions so that OCV can properly evaluate and size the orifice.

**MAX. PRESSURE**

The pressures listed below are maximum pressures at 100°F.

<table>
<thead>
<tr>
<th>END CONNECTIONS</th>
<th>DUCTILE IRON</th>
<th>STEEL/STN STL</th>
<th>LOW-LEAD BRONZE</th>
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</thead>
<tbody>
<tr>
<td>Threaded</td>
<td>640 psi</td>
<td>640 psi</td>
<td>500 psi</td>
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<tr>
<td>300# Flanged</td>
<td>640 psi</td>
<td>740 psi</td>
<td>500 psi</td>
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</table>

**SIZING GUIDELINES**

Pressure sustaining valves and pressure relief valves that operate frequently should be limited to a maximum velocity of 25 ft/sec.

Pressure relief valves that operate intermittently may be extended to 45 ft/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 ValveMaster 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” 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.

**SCHEMATIC**

See reverse.
SIZES
GLOBE/ANGLE
Screwed Ends: 1 1/4" - 3"
Flanged Ends: 1 1/4" - 24" (globe); 1 1/4" - 16" (angle)

FLUID OPERATING TEMPERATURE RANGE
(Valve Elastomers)
EPDM 32°F to 230°F*

SPRING RANGES (inlet setting)
200-740 psi

MATERIALS
Consult factory for others.

B od y/Bonnet: Ductile Iron (epoxy coated), Carbon Steel (epoxy coated), Stainless Steel, low-lead Bronze, Others available (consult factory)

Seat Ring: low-lead Bronze, Stainless Steel

Stem: Stainless Steel, Monel

Spring: Stainless Steel

Diaphragm: EPDM*

Seat Disc: EPDM*

Pilot: Stainless Steel

Other pilot system components: low-lead Bronze/Brass, All Stainless Steel

Tubing & Fittings: Stainless Steel

*Others available upon request.

**Valves 1-1/4" through 24" are certified to NSF/ANSI 372. Valves 4" through 24" are also certified to NSF/ANSI 61-6.

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 be accompanied 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 low-lead Bronze. Elastomers (diaphragms, resilient seats and O-rings) shall be EPDM. Control pilots shall be CF8M stainless steel. 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> of <X> psi at flow rates ranging from <X to X> gpm.

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

U.S. DIMENSIONS - INCHES

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*GROOVED END NOT AVAILABLE IN 1 1/4"*

For maximum efficiency, the OCV control valve should be mounted in a piping system so that the valve bonnet (cover) is in the top position. Other positions are acceptable but may not allow the valve to function to its fullest and safest potential. In particular, please consult the factory before installing 8" and larger valves, or any valves with a limit switch, in positions other than described. Space should be taken into consideration when mounting valves and their pilot systems.

A routine inspection & maintenance program should be established yearly by a qualified technician. Consult our factory @ 1-888-628-8258 for parts and service.

How to order your Model 108-2HP valve
When ordering please provide:
Fluid to be controlled - Model Number - Size
Globe or Angle - End Connection - Body Material - Trim
Material - Pressure Setting - Special Requirements / Installation Requirements

Data required for orifice plate sizing:
Relief Setting - Pump Flow at Relief Setting - Downstream Pressure (if applicable)

TOLL FREE 1.888.628.8258 ● phone: (918)627.1942 ● fax: (918)622.8916 ● 7400 East 42nd Place, Tulsa, Oklahoma 74145
email: sales@controlvalves.com ● website: www.controlvalves.com

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