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 applications include:

- Pump systems
- Fuel distribution systems

**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 a single screw
- Quick opening; adjustable closing speed
- 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 response to the system variables.

**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
4. Model 141-3 Flow Control Valve
5. Model 123 Inline Strainer
6. Model 155L Visual Indicator (optional)

**SCHEMATIC**

FLOW

**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 start-up 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.

**SIZING**

Due to static electricity and other concerns, pressure sustaining valves and pressure relief valves that operate frequently should be limited to a maximum velocity of 4.6 meters/second. Pressure relief valves that operate intermittently may be extended to 7.5 meters/second.

Please consult factory for definitive sizing assistance.

**MAX. PRESSURE**

(The pressures listed here are maximum working pressures at 37.78°C)

<table>
<thead>
<tr>
<th>END CONNECTIONS</th>
<th>DUCTILE IRON</th>
<th>STEEL WCB</th>
<th>STEEL LCB</th>
<th>STN. STL.</th>
<th>ALUMINUM</th>
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</thead>
<tbody>
<tr>
<td>Threaded</td>
<td>44.1 bar</td>
<td>44.1 bar</td>
<td>44.1 bar</td>
<td>44.1 bar</td>
<td>19.7 bar</td>
</tr>
<tr>
<td>Grooved</td>
<td>20.7 bar</td>
<td>20.7 bar</td>
<td>20.7 bar</td>
<td>20.7 bar</td>
<td>13.8 bar</td>
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<tr>
<td>150# Flanged</td>
<td>17.2 bar</td>
<td>19.7 bar</td>
<td>18.4 bar</td>
<td>19.0 bar</td>
<td>19.7 bar</td>
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<td>300# Flanged</td>
<td>44.1 bar</td>
<td>51.0 bar</td>
<td>48.0 bar</td>
<td>49.6 bar</td>
<td>----</td>
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</table>

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.

phone: (918)627.1942  •  fax: (918)622.8916  •  7400 East 42nd Place, Tulsa, OK 74145
email: sales@controlvalves.com  •  website: www.controlvalves.com
SIZES
Screwed Ends - 1 1/4" - 3" (DN32 thru DN60)
Grooved Ends - 1 1/2" - 4" (globe) (DN40 thru DN100)
1 1/2" - 4" (angle) (DN40 thru DN100)
Flanged Ends - 1 1/4" - 2 1/2" (globe) (DN32 thru DN600)
1 1/4" - 1 1/2" (angle) (DN32 thru DN400)

FLUID OPERATING TEMPERATURE RANGE
(Valve Elastomers)
Buna-N -40°C to 82.22°C
Viton -6.67°C to 110°C
Fluosilicone -40°C to 65.56°C
EPDM -17.78°C to 110°C

SIZES
Screwed Ends - 1 1/4" - 3"
Grooved Ends - 1 1/2" - 4" (globe)
Flanged Ends - 1 1/4" - 24" (globe)
1 1/2" - 4" (angle)

FLUID OPERATING TEMPERATURE RANGE
(Valve Elastomers)
Buna-N -40°C to 82.22°C
Viton -6.67°C to 110°C
Fluosilicone -40°C to 65.56°C
EPDM -17.78°C to 110°C

SPECIFICATIONS
( Typical Aviation Fueling 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> <angle> 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 pistons be used as an operating means. The pilot sys-
tem shall be furnished complete and installed on the main valve. It shall include a clos-
ing speed control and an inline strainer. 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. All ferrous surfaces shall be coat-
ed with 4 mils of epoxy. The main valve seat ring shall be stainless steel. Elastomers
(diaphragm, resilient seats, and O-rings) shall be Buna-N. Control pilots shall be stain-
less steel. The closing speed control shall be stainless steel, as shall the control line
tubing and fittings.

OPERATING CONDITIONS
The <pressure relief> <pressure sustaining> valve shall be suitable for controlling the
inlet pressure to a <maximum> <minimum> of <X> bar at flow rates ranging from
<Y to Z> 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.

**Note: for military fueling valves, 8" (DN150) 150# flanges have 20" (20 mm) face to face dimensions and 6" (DN150) 300# flanges have 20-7/8" (208 mm) face to face dimensions.**

**Note: for military fueling valves, 8" (DN150) 150# flanges have 20" (20 mm) face to face dimensions and 6" (DN150) 300# flanges have 20-7/8" (208 mm) face to face dimensions.**

METRIC DIMENSIONS - M.M.

<table>
<thead>
<tr>
<th>D/M</th>
<th>END CONN</th>
<th>DN32, DN40</th>
<th>DN50</th>
<th>DN65</th>
<th>DN80</th>
<th>DN100</th>
<th>DN150</th>
<th>DN200</th>
<th>DN250</th>
<th>DN300</th>
<th>DN350</th>
<th>DN400</th>
<th>DN600</th>
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<tr>
<td>SCREWED</td>
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<td>251</td>
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<td>300</td>
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<tr>
<td>GROOVED</td>
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<td>251</td>
<td>267</td>
<td>300</td>
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<tr>
<td>1500 FLGD</td>
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<td>324</td>
</tr>
</tbody>
</table>

CE Markings
Applies to fuel valves installed in the European Union in accordance with the Pressure
Equipment Directive, 97/23/EC
OCV is CE marked valves are available in LCB steel and CF8M stainless steel only
The following valves will be CE-marked:
- 6" (DN150) and larger valves, 150# and 300# class, liquid fuel only
- 2" (DN50) thru 4" (DN100) valves, 300# class, liquid fuel
- 1 1/4" (DN32) thru 4" (DN100) valves, 300# class, LPG or Butane service
- 4" (DN100) and smaller valves in Class 150# (liquids) are furnished under SEP
  with no CE-mark

For maximum efficiency, the OCV control valve should be mounted in a piping sys-
tem 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" (DN200) and larger valves, or any valves with a
limit switch, in positions other than described. Space should be taken into considera-
tion when mounting valves and their pilot systems.

A routine inspection & maintenance program should be established and conducted yearly
by a qualified technician. Consult our factory @ (918)627-1942 for parts and serv-
ice.

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

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