Solenoid Control Valve Series 115

**ZONE CONTROL**

- Operates automatically off the pressure
- Heavy-duty nylon-reinforced diaphragm
- Rectangular-shaped, soft seat ring provides high Class VI closure
- Replaceable seat ring, throttling seat retainer for ease of maintenance
- Proper reassembly after removal from the line

**LEVEL CONTROL**

Valve, actuated by level sensor, fills storage tank.

**SERIES FEATURES**

- Available for AC or DC voltages.
- Wider range of sizes and flow capacity than is available with direct acting solenoid valves.
- Valves can be equipped with Manual Override solenoid operators
- Solenoid features can be added to other hydraulic control valves.

---

**TOLL FREE 1.888.628.8258**

**email:** sales@controlvalves.com
**sales@controlvalves.com**
**phone:** (918) 627.1942
**www.controlvalves.com**

---

**DIMENSIONS**

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>115-2</td>
<td>2-3/4</td>
<td>9-3/16</td>
<td>2-1/8</td>
<td>1-1/2</td>
<td>1-1/2</td>
</tr>
</tbody>
</table>

---

**Specifications**

**Material Specification**

- Valve Body: Cast Steel
- Bonnet: Stainless Steel
- Disc: Stainless Steel

**Pressure Classes**

- Screwed: 150#, 300#, 600#, 900#, 1500#, 2500#
- Flanged: 150#, 300#, 600#, 900#, 1500#, 2500#
**SIZING CONSIDERATIONS**

**Solving of Series 115 Valves**

Our ValveMaster Premier selection and sizing software covers this in detail; however, if you do not have access to this software online, solving for the following procedure should result in satisfactory operation.

1. Decide whether a globe or angle valve will best fit your installation. Keep in mind that it is always best to install any control valve “bonnet up,” particularly in sizes 6” and larger.

2. Begin with a line-sized valve. Calculate the pressure drop from the formula:

\[ \Delta P = \frac{Cv}{(Q)^2} \]

where: \( \Delta P \) = pressure drop, psi
\( Q \) = specific gravity of line fluid (water = 1.0)
\( Cv \) = Valve coefficient from the table below

3. The pressure drop calculated is for a wide-open valve and would be true for an exhaust-to-atmosphere valve (115-4) regardless of flow rate. On the other hand, if the valve exhaust to downstream (115-2) may not be wide open, refer to the “wide open at” column of the table below. If the flow rate is less than this figure, the pressure drop over the valve can be 2-3 psi higher than the value calculated in Step 1. If the flow rate is greater than the figure given, the valve will be wide open and will have a pressure drop equal to the exhaust-to-atmosphere value.

4. Check to see that the flow velocity does not exceed the 20,000 ft/min. If the diaphragm is driven, or if the pressure drop is excessive, consider using the next size larger valve.

5. Finally, if an exhaust-to-atmosphere valve is selected, make note of the diaphragm chamber discharge. This quantity of water will be discharged into the atmosphere each time the valve opens or closes. Provision should be made to catch or otherwise dispose of this water.

**FLOW CHARACTERISTICS**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>C (GALLONS)</th>
<th>A (INCHES)</th>
<th>WIDE OPEN AT (PSI)</th>
<th>DIAPHRAGM CHAMBER DISCHARGE (GALLONS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2</td>
<td>1 1/2</td>
<td>35</td>
<td>120</td>
<td>0.05</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>45</td>
<td>120</td>
<td>0.06</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>55</td>
<td>120</td>
<td>0.07</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>150</td>
<td>1800</td>
<td>0.05</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>180</td>
<td>2400</td>
<td>0.05</td>
</tr>
<tr>
<td>14</td>
<td>14</td>
<td>210</td>
<td>3600</td>
<td>0.05</td>
</tr>
<tr>
<td>24</td>
<td>24</td>
<td>250</td>
<td>6000</td>
<td>0.05</td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>280</td>
<td>9000</td>
<td>0.05</td>
</tr>
<tr>
<td>40</td>
<td>40</td>
<td>300</td>
<td>12000</td>
<td>0.05</td>
</tr>
</tbody>
</table>

**COMPONENTS**

1. Basic Valve
2. 2-Way solenoid
3. 3-Way solenoid
4. 3-Way auxiliary pilot
5. Ejector
6. Needle valve speed control
7. Needle valve
8. Isolation ball valve

**ABOUT YOUR VALVE**

OCV Control Valves was founded more than 60 years ago with a vision and commitment to quality and reliability. From modest beginnings, the company has grown into a global leader, providing the highest quality valves that meet and exceed industry standards. Our valves are ISO 9001:2008 certified, meaning we are committed to a quality assurance program. Simply stated, we take pride in all that we do.

From modest beginnings, the company has grown into a global leader, providing the highest quality valves that meet and exceed industry standards. Our valves are ISO 9001:2008 certified, meaning we are committed to a quality assurance program. Simply stated, we take pride in all that we do.

Our valves are not only built to meet and exceed industry standards, but also incorporate the latest in control and reliability. From modest beginnings, the company has grown into a global leader, providing the highest quality valves that meet and exceed industry standards. Our valves are ISO 9001:2008 certified, meaning we are committed to a quality assurance program. Simply stated, we take pride in all that we do.

To learn more about OCV Control Valves, please visit our website: www.controlvalves.com

**CONTACTS**

Global performance. Personal touch.

TOLL FREE 1-888-628-8258
phone: (918) 627-1942
fax: (918) 622-8916
7400 East 42nd Place, Tulsa, Oklahoma 74145

sales@controlvalves.com
website: www.controlvalves.com

Global performance. Personal touch.

TOLL FREE 1-888-628-8258
phone: (918) 627-1942
fax: (918) 622-8916
7400 East 42nd Place, Tulsa, Oklahoma 74145

sales@controlvalves.com
website: www.controlvalves.com

Global performance. Personal touch.
### Solenoid Control Valve Series 115

#### VALVE OPERATION

**Solenoid Valve Types**

**Model 115-1 Three-Way Solenoid**
Operated by a 3-Way solenoid and ejector. The main valve diaphragm chamber may be exhausted to atmosphere, allowing for full-open operation at any flow rate. Standard valve includes needle valve opening/closing speed control adjustment. Size ranges 1” – 4”, general factory on application of larger sizes.

**Model 115-2 Two-Way Solenoid**
Operated by a 2-Way solenoid and ejector. The main valve diaphragm is exhausted to waste, allowing for full-open operation at any flow rate. Standard valve includes needle valve opening/closing speed control adjustment. Size ranges 1” – 4”, consult factory on application of larger sizes.

**Model 115-3 Positioned Valve**
Operated by two solenoid valves. The valve may be positioned from fully closed to full open in any intermediate position. Equipped with both opening and closing speed control adjustment. The valve can be configured to open, close, or hold position in the event of lockout or lock-in any intermediate position. Equipped with both opening and closing speed control adjustment. Size ranges 1” – 4”, consult factory on application of larger sizes.

**Model 115-4 Three-Way Solenoid With Accelerator**
Operated by a 3-Way solenoid which operates a large port accelerator pilot, allowing quick response on larger valves. Standard valve includes needle valve opening/closing speed control adjustment. Size ranges 1” – 6”, consult factory on application of larger sizes.

**Model 115-5 Four-Way Solenoid**
Operated by two 2-Way solenoids. The valve maybe positioned from full closed to full open in any intermediate position. Equipped with both opening and closing speed control adjustment. The valve can be configured to open, close, or hold position in the event of lockout or lock-in any intermediate position. Equipped with both opening and closing speed control adjustment. Size ranges 1” – 6”, consult factory on application of larger sizes.

### SIZING CONSIDERATIONS

**Flow of Series 115 Valves**

Our ValveMaster Premier selection and sizing software covers this in detail; however, if you do not have access to this software online, selecting the following procedure should result in satisfactory operation.

1. Decide whether a globe or angle valve will best fit your installation. Keep in mind that it is always better to install any control valve "turned out" particularly in sizes 6” and larger.

2. Begin with a low-flow valve.

   \[Q = \frac{C_v}{D P}\]

   where
   
   \(D P = \text{pressure drop, psi}\)
   
   \(Q = \text{flow rate, gpm}\)
   
   \(C_v = \text{valve coefficient from the table below}\)

3. The pressure drop calculated is for a wide-open valve and would be true for an exhaust-to-atmosphere valve (115-1 or 115-4) regardless of size. On the other hand, a valve exhausting to downstream (115-2) may not be wide open, relative to the "wide open at" column of the valve tables. If the flow rate is less than the value in the "wide open at" column of the valve tables, the flow rate will be the same as the valve calculated in Step 2. If the flow rate is higher than the figure given, the valve will be wide open and will have a pressure drop equal to the exhaust-to-atmosphere valve.

4. Check to see that the flow velocity does not exceed 20 ft/sec. If it does, or if the pressure drop is excessive, consider using the next size valve.

5. Finally, if an exhaust-to-atmosphere valve is selected, make note of the diaphragm chamber discharge. This quantity of water will be discharged into the atmosphere each time the valve opens or closes. Provision should be made to drain or otherwise dispose of this water especially in sizes 8” and larger.

**FLOW CHARACTERISTICS**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>(GALLONS)</th>
<th>(ANGLE)</th>
<th>(C) GLOBE</th>
<th>2 FT/ISC</th>
<th>(GPM)</th>
<th>(FT/MIN)</th>
<th>(DP)</th>
<th>(CHAMBER DISCHARGE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2</td>
<td>25</td>
<td>30</td>
<td>30</td>
<td>720</td>
<td>120</td>
<td>60</td>
<td>400</td>
<td>25.00</td>
</tr>
<tr>
<td>2</td>
<td>47</td>
<td>52</td>
<td>47</td>
<td>100</td>
<td>100</td>
<td>50</td>
<td>600</td>
<td>400.00</td>
</tr>
<tr>
<td>3</td>
<td>76</td>
<td>58</td>
<td>56</td>
<td>125</td>
<td>125</td>
<td>62</td>
<td>800</td>
<td>500.00</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>60</td>
<td>50</td>
<td>150</td>
<td>150</td>
<td>75</td>
<td>1000</td>
<td>600.00</td>
</tr>
<tr>
<td>5</td>
<td>125</td>
<td>55</td>
<td>55</td>
<td>175</td>
<td>175</td>
<td>85</td>
<td>1200</td>
<td>800.00</td>
</tr>
<tr>
<td>6</td>
<td>150</td>
<td>55</td>
<td>55</td>
<td>200</td>
<td>200</td>
<td>95</td>
<td>1400</td>
<td>1000.00</td>
</tr>
<tr>
<td>8</td>
<td>200</td>
<td>50</td>
<td>50</td>
<td>250</td>
<td>250</td>
<td>110</td>
<td>1800</td>
<td>1300.00</td>
</tr>
<tr>
<td>10</td>
<td>250</td>
<td>45</td>
<td>45</td>
<td>275</td>
<td>275</td>
<td>120</td>
<td>2200</td>
<td>1600.00</td>
</tr>
<tr>
<td>12</td>
<td>300</td>
<td>40</td>
<td>40</td>
<td>300</td>
<td>300</td>
<td>130</td>
<td>2600</td>
<td>2000.00</td>
</tr>
<tr>
<td>14</td>
<td>350</td>
<td>35</td>
<td>35</td>
<td>325</td>
<td>325</td>
<td>140</td>
<td>3000</td>
<td>2400.00</td>
</tr>
<tr>
<td>16</td>
<td>400</td>
<td>30</td>
<td>30</td>
<td>350</td>
<td>350</td>
<td>150</td>
<td>3400</td>
<td>2800.00</td>
</tr>
<tr>
<td>18</td>
<td>450</td>
<td>30</td>
<td>30</td>
<td>375</td>
<td>375</td>
<td>160</td>
<td>3800</td>
<td>3200.00</td>
</tr>
<tr>
<td>20</td>
<td>500</td>
<td>25</td>
<td>25</td>
<td>400</td>
<td>400</td>
<td>170</td>
<td>4200</td>
<td>3600.00</td>
</tr>
<tr>
<td>24</td>
<td>600</td>
<td>20</td>
<td>20</td>
<td>450</td>
<td>450</td>
<td>180</td>
<td>4600</td>
<td>4000.00</td>
</tr>
<tr>
<td>28</td>
<td>650</td>
<td>20</td>
<td>20</td>
<td>500</td>
<td>500</td>
<td>190</td>
<td>5000</td>
<td>4400.00</td>
</tr>
<tr>
<td>32</td>
<td>700</td>
<td>15</td>
<td>15</td>
<td>550</td>
<td>550</td>
<td>200</td>
<td>5400</td>
<td>4800.00</td>
</tr>
<tr>
<td>36</td>
<td>750</td>
<td>15</td>
<td>15</td>
<td>600</td>
<td>600</td>
<td>210</td>
<td>5800</td>
<td>5200.00</td>
</tr>
</tbody>
</table>

### ABOUT YOUR VALVE

OCV Control Valves was founded more than 60 years ago with a vision and commitment to quality and reliability. From modest beginnings, the company has grown to be a global leader in the supply of globe and angle valves that meet and exceed industry standards around the world. OCV valves are held to the highest performance standards possible within the context of cost-efficiency and quality. In doing so, OCV valves are able to supply products in any quality to meet any need within any budget. OCV valves are known for their ability to serve industries ranging from the food and beverage to the automotive industry. OCV valves are equipped with a large number of features that make them well suited for any application. OCV valves are designed to perform in any condition, from high pressure to low pressure, from high flow to low flow. OCV valves are designed to provide a long life, and are built to last. OCV valves are designed to provide quality craftsmanship, expert support, exacting control and the know-how to create valves known for their long life.

All valves are not created equal. OCV Control Valves proves that day in and day out. We stand behind our valves and are ready to serve your needs. You will find OCV valves in irrigation systems in Europe, South America and the Middle East. You will find OCV valves in many of the largest and most well known facilities in the world. The original foundation on which the company was built allows our team of professionals to not only provide the service required to be a top-notch vendor, but also to provide the personal touch necessary to be each of our customer’s best partner. We stand behind our valves and are ready to serve your needs. You will find OCV valves in irrigation systems in Europe, South America and the Middle East. You will find OCV valves in many of the largest and most well known facilities in the world. The original foundation on which the company was built allows our team of professionals to not only provide the service required to be a top-notch vendor, but also to provide the personal touch necessary to be each of our customer’s best partner. Simply stated, we take pride in all that we do.

OCV Control Valves offers a full range of globe and angle valves in a variety of materials, from cast iron to bronze, and from brass to stainless steel. OCV valves are available in a variety of sizes, from small to large, and are designed to meet the needs of any application. OCV valves are equipped with a large number of features that make them well suited for any application. OCV valves are known for their ability to serve industries ranging from the food and beverage to the automotive industry. OCV valves are designed to perform in any condition, from high pressure to low pressure, from high flow to low flow. OCV valves are designed to provide a long life, and are built to last. OCV valves are designed to provide quality craftsmanship, expert support, exacting control and the know-how to create valves known for their long life.

**Solenoid Valve Selection Guide**

This chart provides only a sample of those most often specified valves. Consult the factory for specific data on the model you seek.

Combination valves can often reduce or eliminate other equipment. For example, if the system requires a reverse flow check function, the check feature can be added as a function of the Solenoid Valve Series 115.

**Feature**

<table>
<thead>
<tr>
<th>Two-Way Solenoid</th>
<th>Three-Way Solenoid</th>
<th>Four-Way Solenoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**Preparation**

1. **Needle Valve Speed Control**
2. **Ejector**
3. **2-Way Solenoid**
4. **3-Way Solenoid**

**Combination valve performance depends on day-to-day application.**

**Contact Us**

email: sales@controlvalves.com

phone: (918) 627, 1942

fax: (918) 622, 8916

website: www.controlvalves.com

Global performance, personal touch.

Global performance, personal touch.
**SIZING CONSIDERATIONS**

Sizing of Series 115 Valves

Our ValveMaster Premier selection and sizing software covers this in detail; however, if you do not have access to this software online, using the following procedure should result in satisfactory operation.

1. Decide what a globe or angle valve will best fit your installation. Keep in mind that it is always best to install any control valve "bonnet up," particularly in sizes 6" and larger.

2. Begin with a line-sized valve. Calculate the pressure drop from the formula:

\[ DP = \frac{Q^2}{Cv^2} \]

where:
- \( DP = \) pressure drop, psi
- \( Q = \) specific gravity of line fluid (water = 1.0)
- \( Cv = \) valve coefficient from the table below

3. The pressure drop calculated in the line-sized valve and auxiliary pilot would be too large to accommodate valve stems (1/2" or 1/4") regardless of flow rate. On the other hand, a valve sized to achieve a "wide open at" value and auxiliary pilot, flow to the "wide open at" column of the valve table. If the flow rate is less than the figure given, the valve can be used. If the flow rate is higher than the figure given, the valve will be wide open and will have a pressure drop equal to the exhaust-to-atmosphere series. (See chart).

4. Check to see that the fluid velocity does not exceed the 20 ft/sec. If it does, or if the pressure drop is excessive, consider using the next size larger valve.

5. Finally, if an exhaust-to-atmosphere valve is selected, make note of the diaphragm chamber discharge. This quantity of water will be discharged into the atmosphere each time the valve opens or closes. Provision should be made to catch or otherwise dispose of this water.

**FLOW CHARACTERISTICS**

<table>
<thead>
<tr>
<th>SIZE (GALLONS)</th>
<th>FLOW (@ 100 SCFM)</th>
<th>WEIDE OPEN @ (PSI)</th>
<th>DIAMPH CHAMBER DISCHARGE (GALLONS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
<td>25</td>
<td>75</td>
<td>0.025</td>
</tr>
<tr>
<td>1/4</td>
<td>75</td>
<td>120</td>
<td>0.10</td>
</tr>
<tr>
<td>3/8</td>
<td>100</td>
<td>180</td>
<td>0.15</td>
</tr>
<tr>
<td>1/2</td>
<td>150</td>
<td>250</td>
<td>0.25</td>
</tr>
<tr>
<td>3/4</td>
<td>200</td>
<td>400</td>
<td>0.75</td>
</tr>
<tr>
<td>1</td>
<td>250</td>
<td>650</td>
<td>2.00</td>
</tr>
<tr>
<td>1 1/4</td>
<td>350</td>
<td>1000</td>
<td>3.20</td>
</tr>
<tr>
<td>1 1/2</td>
<td>500</td>
<td>1600</td>
<td>5.00</td>
</tr>
<tr>
<td>2</td>
<td>650</td>
<td>2500</td>
<td>7.50</td>
</tr>
<tr>
<td>2 1/2</td>
<td>850</td>
<td>3500</td>
<td>11.00</td>
</tr>
<tr>
<td>3</td>
<td>1250</td>
<td>4500</td>
<td>17.50</td>
</tr>
<tr>
<td>4</td>
<td>1750</td>
<td>6500</td>
<td>27.00</td>
</tr>
</tbody>
</table>

**Components**

1. Basic Valve
2. 2-Way solenoid
3. 3-Way solenoid
4. Auxiliary pilot
5. Ejector
6. Needle valve speed control
7. Isolation ball valve

---

**ABOUT YOUR VALVE**

OCV Control Valves was founded more than 60 years ago with a vision and commitment to quality and excellence. From much-sought-after, the company has grown to be a global leader in providing high-quality, reliable valves and control systems worldwide. OCV's ISO 9001 certification and commitment to quality and excellence are reflected in the service and support provided to our customers. Every OCV valve is designed, engineered, and manufactured to meet or exceed the most stringent requirements, ensuring the highest level of performance and reliability. Our commitment to quality and excellence is reflected in every aspect of our business, from product design and development to customer service and support. Whether you need valves for a simple or complex application, OCV has the solution for you. Our valves are designed to meet the highest standards of quality and performance, ensuring that our customers can rely on them to do the job right every time. OCV Control Valves is committed to providing the best possible service and support to our customers, ensuring that they have the tools and resources they need to succeed. From design and engineering to product development and manufacturing, OCV is dedicated to providing the highest level of quality and performance in every aspect of our business. OCV Control Valves is your partner in valve design and manufacture, providing products that are engineered to perform and built to last. Whether you need valves for a simple or complex application, OCV has the solution for you.
Used in irrigation and industrial processes, each flow line can be activated independently of the others.

Valve, activated by level sensor, fills storage tank.

The OCV Series 115 Solenoid Control Valve is designed to provide on/off or open/close control of fluids in response to an electrical signal. The valve consists of the basic OCV Series 65 with solenoid-operated pilot. With the appropriate solenoid, the valve may be normally closed (energize to open) or normally open (de-energize to open).

SERIES FEATURES
- Operate automatically off of the process.
- Heavy-duty, nylon-reinforced diaphragm.
- Rectangular-shaped, soft seat seal provides drip-tight Class VI closure.
- Diaphragm assembly guided top and bottom.
- Thrust bearing for long and precise stability.
- Easily maintained without removal from the line.
- Replaceable seat ring.
- Alignment pins assure proper realignment after maintenance.
- Factory tested.
- Serial numbered and registered to facilitate replacement parts and factory support.

TOLL FREE 1.888.628.8258 /FAX: 1.918.622.8916 /www.controlvalves.com
The OCV Series 115 Solenoid Control Valve is designed to provide on/off or nonlinear control of steam to an electric motor. The valve consists of the basic OCV 65 with solenoid-operated pilot. With the solenoid feature added to the valve, flow (or pressure) can be automatically controlled. The pilot assembly is electrically operated to control and modulate the valve opening. This automatic control provides for the precise regulation of steam flow to an electric motor.

**Features:**
- On/off control
- Nonlinear control
- Automatic regulation
- Precise flow regulation

**Applications:**
- Steam systems
- Electric motor control
- Process control

**Technical Specifications:**
- Flow capacity: High
- Pressure range: High
- Temperature range: High

**Installation Notes:**
- Ensure proper electrical connections
- Follow manufacturer's installation instructions

**Contact Information:**
- Sales: sales@controlvalves.com
- Phone: (918) 622-8916
- Website: www.controlvalves.com

---

**Solenoid Control Valve Series 115**

**Valve Body & Bonnet**
- Stainless Steel
- Cast Steel

**Material Specifications**
- Stainless Steel
- Cast Steel

**End Connections**
- Flange
- Threaded

**Valve Series**
- 115

**Series Features**
- On/off control
- Nonlinear control
- Automatic regulation
- Precise flow regulation

---

**Dimensions**

- **U.S. Dimensions:**
  - **A**
  - **B**
  - **C**
  - **D**
  - **E**

**Technical Specifications**
- **Flow Capacity:** High
- **Pressure Range:** High
- **Temperature Range:** High

---

**Contact Information:**
- Sales: sales@controlvalves.com
- Phone: (918) 622-8916
- Website: www.controlvalves.com

---

**Toll Free:** 1.888.628.8258