The Model 115-3 has a wide range of applications: anywhere it may be required to position a valve electrically. Typical examples include:

- Process control
- Supervisory flow or pressure control
- Fuel terminal loading racks

SERIES FEATURES

- Electrically operated solenoids enable the valve to be opened, closed, or held in any position
- Can be maintained without removal from the line
- Independently adjustable opening and closing speeds
- Factory tested and can be pre-set to your requirements
- Needle valves can be used for isolation during maintenance and troubleshooting

OPERATION

Two two-way solenoids operate the Model 115-3. The first connects the main valve inlet to the diaphragm chamber and, when it is open, causes the main valve to close. The second solenoid connects the diaphragm chamber to the main valve outlet and, when it is open, allows the main valve to open. A needle valve is installed in series with each solenoid, giving separate adjustment of the valve opening and closing speeds.

The solenoids can be supplied to give one of the following “default” modes on absence or loss of electrical power:
- Default to closed
- Default to open
- Default in last position

COMPONENTS

The Model 115-3 consists of the following components, arranged as shown on the schematic diagram:
1. Model 65 Basic Control Valve (fail closed)
2. Model 450 Two-Way Solenoid Pilot
3. Model 451 Two-Way Solenoid Pilot
4. Model 141-2 Needle Valve
5. Model 123 Inline Strainer
6. Model 155 Visual Indicator (optional)

SCHEMATIC

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.
- Following main valve installation, the solenoid must be wired into the user’s control system. This is a simple two-wire (plus ground) connection.

SIZING

Definitive sizing information can be found in the Series 115 section of the OCV Catalog and Engineering section Performance Charts. Consult the factory for 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>
</tr>
</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>
</tr>
<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>
</tr>
<tr>
<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>
</tr>
</tbody>
</table>

Note: Working pressures of solenoids vary greatly, consult factory on application of OCV Model 115-3 valves.

MAXIMUM FLUID FLOW

<table>
<thead>
<tr>
<th>SIZE (MM)</th>
<th>DN32</th>
<th>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>DN450</th>
<th>DN500</th>
<th>DN600</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.29 M/SEC (MILITARY)</td>
<td>9</td>
<td>11</td>
<td>18</td>
<td>27</td>
<td>41</td>
<td>68</td>
<td>154</td>
<td>272</td>
<td>420</td>
<td>602</td>
<td>726</td>
<td>942</td>
<td>1192</td>
<td>1487</td>
<td>2134</td>
</tr>
<tr>
<td>4.57 M/SEC (MAX RECOMMENDED)</td>
<td>16</td>
<td>23</td>
<td>36</td>
<td>52</td>
<td>79</td>
<td>136</td>
<td>306</td>
<td>533</td>
<td>840</td>
<td>1192</td>
<td>1441</td>
<td>1884</td>
<td>2384</td>
<td>2974</td>
<td>4268</td>
</tr>
<tr>
<td>6.10 M/SEC (MAX CONTINUOUS)</td>
<td>23</td>
<td>30</td>
<td>48</td>
<td>68</td>
<td>107</td>
<td>182</td>
<td>409</td>
<td>715</td>
<td>1124</td>
<td>1589</td>
<td>1918</td>
<td>2520</td>
<td>3178</td>
<td>3950</td>
<td>5698</td>
</tr>
</tbody>
</table>

U.S. Military valves cannot exceed a max velocity of 2.29 m/sec. Max recommended fluid flow for petroleum fluids is 4.57 m/sec. Max continuous flow for all fluids is 6.10 m/sec.
The solenoid control valves shall operate by means of discrete electrical signals. The valve shall be equipped with two two-way solenoid valves that will allow the valve to be opened, closed, or held in any intermediate position. The solenoids shall be configured so that the valve will operate on loss of electric power.

DESIGN

The solenoid valve shall be a single-seated, line pressure operated, diaphragm-actuated, 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 not be used as a seat 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 two needle valves, an inline strainer and two solenoid valves. The solenoid control 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 coated with 4 mils of epoxy. The main valve seat ring shall be stainless steel. Elastomers (diaphragms, resilient seats and O-rings) shall be Buna-N. The needle valve and control line tubing shall be stainless steel. The solenoid valves shall have stainless steel bodies, explosion-proof enclosures and be suitable for operation on specified voltages.

OPERATING CONDITIONS

The solenoid control valve shall be suitable for pressures of <X to X> bar at flow rates up to <X> m³/hr.

ACCEPTABLE PRODUCTS

The solenoid control valve shall be a <size> Model 115-3, <globe pattern, angle pattern>, with <150# flanged, 300# flanged, threaded, grooved> end connections, as manufactured by OCV Control Valves, Tulsa, Oklahoma, USA.

SPECIFICATIONS (Typical Terminal Services Application)

The solenoid control valve shall operate by means of discrete electrical signals. The valve shall be equipped with two two-way solenoid valves that will allow the valve to be opened, closed, or held in any intermediate position. The solenoids shall be configured so that the valve will open, close, hold position on loss of electric power.

DESIGN

The solenoid valve shall be a single-seated, line pressure operated, diaphragm-actuated, 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 not be used as a seat 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 two needle valves, an inline strainer and two solenoid valves. The solenoid control valve shall be operationally and hydrostatically tested prior to shipment.

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