Anti water hammer solenoid valve
Slow closing. Normally closed and Normally open.

Jefferson reduces the water hammer problem.

The water hammer, or Joukowski impulse, is the main cause of breakdowns, sometimes of a severe nature, in pipelines and hydraulic installations. In an hydraulic circuit, the quick closing of a valve results in a sudden interruption of the flow, generating in the upstream pipeline’s pressure wave which goes through it back and forth several times at about the sound speed and with an amplitude which may be over 100 bar depending, among other factors, on the closing speed, the flow speed and the pipeline’s length. Jefferson’s slow-closing valves act on the closing speed, which is ultimately the only factor which may be altered in an already installed circuit.

In order to make an approximate calculation of the transient pressure amplitude at the time the valve is closed, the following formula may be used:

**Metric system:**
\[ P_T (\text{bar} m) = \frac{0.0515 \times V (\text{m/s}) \times L (\text{m})}{T (\text{s})} + P_1 (\text{bar} m) \]

**English system:**
\[ P_T (\text{psig}) = \frac{0.07 \times V (\text{ft/s}) \times L (\text{ft})}{T (\text{s})} + P_1 (\text{psig}) \]

Slow closing is inversely proportional to transient \( \Delta P \).

**Main characteristics**

- Specifically designed to eliminate water hammer.
- Stainless steel or brass body.
- Normally closed and Normally open.
- Seats and Buna N seals
- Encapsulated coils DIN PG9 electrical connection or metal conduit R.1 / 2 "NPT.

**Technical specifications**

<table>
<thead>
<tr>
<th>Pipe ins.</th>
<th>Ø Orifice</th>
<th>Flow Factor</th>
<th>Weight Kg</th>
<th>Lb</th>
<th>( \Delta P )</th>
<th>Maximum Temperature °C</th>
<th>°F</th>
<th>Catalog N°</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mm ins.</td>
<td>Kv Cv</td>
<td>Minimum bar psi</td>
<td>Maximum bar psi</td>
<td>80°</td>
<td>176</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>20</td>
<td>0.79</td>
<td>5 5.9</td>
<td>1.2 2.6</td>
<td>15 (NC) 10 (NO)</td>
<td>225 (NC) 150 (NO)</td>
<td>1342BA06CLT 1342BA06INACLT</td>
<td></td>
</tr>
<tr>
<td>1&quot;</td>
<td>26</td>
<td>1.02</td>
<td>11 13</td>
<td>1.7 3.8</td>
<td></td>
<td></td>
<td>1342BA08CLT 1342BA08INACLT</td>
<td></td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>38</td>
<td>1.50</td>
<td>25 29</td>
<td>3.1 6.8</td>
<td></td>
<td></td>
<td>1342BA12CLT 1342BA12INACLT</td>
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<tr>
<td>2&quot;</td>
<td>50</td>
<td>1.97</td>
<td>40 47</td>
<td>4.1 9.0</td>
<td></td>
<td></td>
<td>1342BA16CLT 1342BA16INACLT</td>
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</tbody>
</table>
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Slow closing. Normally closed and Normally open.

General dimensions 1342CL

Special construction:
Stainless steel body:
AISI304: change letter B for S in the catalog number.
Example: 1342SA08CL
AISI316: change letter B for I in the catalog number.
Example: 1342IA08CL

Coil characteristics

<table>
<thead>
<tr>
<th>Electric power supply</th>
<th>Coil Type</th>
<th>Power W</th>
<th>VA (volt-amper)</th>
<th>Maximum Temp.</th>
<th>Available tensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC 50 Hz</td>
<td>MF11C</td>
<td>11</td>
<td>40</td>
<td>22</td>
<td>155 311 1</td>
</tr>
<tr>
<td>AC 60 Hz</td>
<td>MF13C</td>
<td>13</td>
<td>45</td>
<td>27</td>
<td>155 311 2</td>
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<tr>
<td>DC</td>
<td>MF19C</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>160 356 3</td>
</tr>
</tbody>
</table>

1-(12, 24, 110, 220, 240)V 2-(12, 24, 110, 120, 220, 240)V 3-(12, 24, 110, 220)V

Recommendations for installation
Place a strainer upstream the valve with a porosity ≤ 100 μ. Mount the valve only over horizontal pipeline with the coil upright. The inlet pressure to the valve must always be greater than the output pressure thereof. For the valve to open, either normally closed or normally open, one must respect the minimum pressure indicated on each model.