Piston Actuated Valves
On/Off Control Simplified
Piston Actuated Valves

Forbes Marshall piston actuated valves provide a competitive solution for on/off control applications by combining many key benefits in one valve.

A unique quality product designed to meet our customer needs offering reliability combined with high performance shut-off.

Simplicity is the key to providing a product that will suit the needs of a wide range of industrial applications.

**Features and benefits**

**Sustained performance** at peak duties

**High seal integrity and long operating life** due to PTFE stem guide and self-aligning gland

Replaceable PTFE soft seat ensures **Class VI tight shut-off**

**Wide choice of connection options** - screwed, butt / socket weld, flanged / triclamp ends

**Operational visibility** of valve position

**Pilot media** - air or water

**Heavy duty actuator** with 360° rotation allows flexible pilot media connection

**Multiple actuation options** - Normally Closed (NC) spring-to-close, Normally Open (NO) spring-to-open or Bi-Directional (BD) spring-to-close

**Visual indication** of valve position
**Technical Details**

<table>
<thead>
<tr>
<th>Leakage</th>
<th>PTFE soft seal</th>
<th>ANSI Class VI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Characteristics</td>
<td>Fast opening</td>
<td>On/off</td>
</tr>
<tr>
<td>Flow direction</td>
<td>NC flow over seat</td>
<td>Port 1 to 2</td>
</tr>
<tr>
<td></td>
<td>NO Flow underseat</td>
<td>Port 2 to 1</td>
</tr>
<tr>
<td></td>
<td>BD Flow overseat</td>
<td>Port 1 to 2</td>
</tr>
<tr>
<td></td>
<td>Flow underseat</td>
<td>Port 2 to 1</td>
</tr>
<tr>
<td>Pilot media * (water-a suitable drain line should be provided)</td>
<td>Air / water*</td>
<td>+60°C (140°F) max</td>
</tr>
<tr>
<td>Actuator housing rotation</td>
<td>360° (clockwise) (see sticker on actuator)</td>
<td></td>
</tr>
<tr>
<td>Actuator size</td>
<td>Pilot connection Max. pilot pressure</td>
<td></td>
</tr>
<tr>
<td>63mm (2½&quot;) diameter</td>
<td>⅛&quot; BSP</td>
<td>10 bar g (145 psi g)</td>
</tr>
<tr>
<td>90mm (3½&quot;) diameter</td>
<td>¼&quot; BSP</td>
<td>8 bar g (116 psi g)</td>
</tr>
</tbody>
</table>

**Limiting Conditions**

<table>
<thead>
<tr>
<th>Body design conditions</th>
<th>DN 15 to 25 PN 25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screwed, butt and socket weld</td>
<td>DN 40, 50 PN 16</td>
</tr>
<tr>
<td>Flanged ANSI</td>
<td>DN 15-50 Class 150</td>
</tr>
<tr>
<td>Sanitary Clamp and tube compatible connections</td>
<td>DN 15-50 PN 10</td>
</tr>
<tr>
<td>Maximum design temperature</td>
<td>180°C</td>
</tr>
<tr>
<td>Maximum design temperature</td>
<td>10°C</td>
</tr>
<tr>
<td>Maximum saturated steam pr.</td>
<td>9 bar g</td>
</tr>
</tbody>
</table>

**Available Types**

**NC (Normally Closed)**
These valves are designed for flow over the seat. (Port 1 to 2).
Not recommended for water hammer prevention.

**NO (Normally Open)**
These valves are designed for flow under the seat (port 2 to 1).
Can be used to prevent water hammer on valve closure in liquid applications.

**BD (Bi-Directional normally closed)**
These valves are designed for special applications that require flow in both directions (port 1 to 2 / port 2 to 1) and incorporate anti-waterhammer design for liquid applications flowing under the seat (port 2 to 1).
Applications

Piston actuated valves are the ideal solution for many process applications for on/off control.

Textiles
- Dyeing machines
- Additive mixing
- Finishing machines
- Caustic washing
- Pressing machines

Food and Beverages
- Cookers
- Filling machines
- Bottling machines
- Heating cabinets
- Bottle washers

Laundries
- Washers
- Hot water heating
- Dry cleaning
- Tumble dryers
- Extractors

And many more
- Pharmaceutical reactors
- Hospital sterilisers
- Tyre presses
- Paper driers
- Rubber injectors

Kv Values

<table>
<thead>
<tr>
<th>Size</th>
<th>DN15</th>
<th>DN20</th>
<th>DN25</th>
<th>DN 40</th>
<th>DN 50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kv</td>
<td>4.2</td>
<td>7.8</td>
<td>18.6</td>
<td>42</td>
<td>51.6</td>
</tr>
</tbody>
</table>

For conversion  
Cv (UK)=Kv x 0.97  
Cv (US)=1.17

End Connections: Screwed, Butt, Socket Weld, Flanged and Triclamp

Adaptations

Flow regulator
Travel switch
Solenoid valve

Media

Air / Nitrogen
Steam
Water / condensate

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