3", 4" and 6" 151/301 Wafer Ball Valves

Compact, flangeless ball valves for installation between ANSI Class 150-pound and 300-pound flanges
Wafer Ball Valves

Compact, flangeless ball valves that keep process control costs low, the envelope small and installation simple

Flowserve Worcester Controls 151/301 wafer ball valves are designed for process systems where lightweight, compact envelope size and ease of installation and repair are important considerations. Available in sizes 3”, 4” and 6”, 151/301 wafer valves are rated at 720 cwp and mount between ANSI Class 150-pound and 300-pound flanges. studs, suitable for the flange rating, are furnished with the valve.

Original and maintenance costs are low with 151/301 wafer valves, yet the valves offer all the advantages of the Series 51/52 flanged valves; downstream seat sealing, low operational torque, bottom-entry, blowout-proof stem and easily removable end plug. Properly sized stem seal rings in a deep stuffing box assure zero leakage, and the Worcester Controls seat design assures positive shutoff.

The weight of Worcester wafer valves is 40 percent to 60 percent less than conventional flanged ball valves and substantially less than comparable gate valves. Their configuration is very compact. The center to top dimension of a 4” 151 wafer ball valve, for example, is only 7.84” as opposed to over 27” for a standard gate valve. This is a valuable space savings for OEM installations, skid-mounted systems and piping systems in confined areas.

Worcester Controls 151/301 wafer valves are available in bronze, ductile iron, carbon steel and 316 stainless steel. A wide number of seat and body seal materials enable these valves to handle a variety of process applications with pressures to 720 psig and temperatures to 500°F.

Easily automated for on/off or modulating control

The lightweight compact design of the 151/301 valves combined with our Series 39 pneumatic or Series 75 electric actuators create a control package that is small, yet efficient. The package is symmetrically balanced to avoid stem side loading, and has a rugged linkage to operate well under high torque conditions. Our actuators are engineered to match the performance of the valve for optimum power and safety.

A wide range of options are available to complement your pneumatic or electric package, from computer compatible controls to limit switches to Cycle Length Control. For on/off or throttling applications, the actuated 151/301 valves are a dependable, precise unit. Because Flowserve supplies all the elements of your control package, we are your single source if you ever need a replacement part or service.
**Specifications**

Sizes: 3”, 4”, 6”

Body Materials: Carbon Steel (ASTM A216 WCB), 316 S.S. (ASTM A351 CF8M), Ductile Iron (ASTM A536 Gr. 65-45-12), Bronze (ASTM B148-C95800)

Stem: One-piece bottom-entry in Brass, 316 S.S., Monel®

Stem Seals: 15% Glass-Filled TFE, UHMWPE

Seats: TFE, Reinforced TFE, Polyfill®, UHMWPE

Body Seals: Graphite, TFE, Buna, Viton®, UHMWPE

Ball: 316 S.S., Monel

End Plug: Carbon Steel, 316 S.S., Ductile Iron, Bronze

Stop Screw: Carbon Steel, Zinc-Plated

Follower: Stainless Steel (316L)

Handle Bolt: Carbon Steel, Zinc-Plated

Handle: 3”-6” Cast Iron with pipe handle

Retaining Nut: Carbon Steel, Zinc Plated, 316 S.S.

Thrust Bearing: 25% Glass-Filled TFE or UHMWPE

End Plug: Stainless Steel, Zinc-Plated

Stop Plate: Carbon Steel, Zinc-Plated

Washer: Stainless Steel, Carbon Steel, Brass

Operation: Supplied with handle. Gear operators and electric or pneumatic actuators available.

Standards: MSS SP-72, Ball Valves for general service. NACE MR-01-75. Pipeline valve standard for sour gas services.

Lubricant: Standard Worcester valves are assembled with silicone based break-in lubricant. For other options, consult your distributor or Flowserve.

**C_v Data**

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>C_v</th>
<th>Equiv Length of Sched. 40 pipe feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>3”</td>
<td>350</td>
<td>7.1</td>
</tr>
<tr>
<td>4”</td>
<td>720</td>
<td>6.9</td>
</tr>
<tr>
<td>6”</td>
<td>1020</td>
<td>20.4</td>
</tr>
</tbody>
</table>

**NOTE:** For steam service, refer to Worcester’s Steam Service Data Sheet for ratings. The data sheet is found in the Engineering Section of the general catalog binder.
Flowserve Corporation has established industry leadership in the design and manufacture of its products. When properly selected, this Flowserve product is designed to perform its intended function safely during its useful life. However, the purchaser or user of Flowserve products should be aware that Flowserve products might be used in numerous applications under a wide variety of industrial service conditions. Although Flowserve can (and often does) provide general guidelines, it cannot provide specific data and warnings for all possible applications. The purchaser/user must therefore assume the ultimate responsibility for the proper sizing and selection, installation, operation, and maintenance of Flowserve products. The purchaser/user should read and understand the Installation Operation Maintenance (IOM) instructions included with the product, and train its employees and contractors in the safe use of Flowserve products in connection with the specific application.

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For more information about Flowserve Corporation, visit www.flowserve.com or call USA 1-800-225-6989.

**Dimensions**

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>Port Diameter</th>
<th>Approx Weight lb. (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot;</td>
<td>4.50</td>
<td>2.25</td>
<td>5.31</td>
<td>3.88</td>
<td>7.22</td>
<td>22.00</td>
<td>5.88</td>
<td>2.50</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>(114.3)</td>
<td>(57.2)</td>
<td>(134.9)</td>
<td>(98.6)</td>
<td>(183.4)</td>
<td>(558.8)</td>
<td>(149.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4&quot;</td>
<td>5.81</td>
<td>2.90</td>
<td>6.81</td>
<td>4.48</td>
<td>7.84</td>
<td>22.00</td>
<td>7.50</td>
<td>3.25</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>(147.6)</td>
<td>(73.7)</td>
<td>(173.0)</td>
<td>(113.8)</td>
<td>(199.1)</td>
<td>(558.8)</td>
<td>(190.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6&quot;</td>
<td>7.38</td>
<td>3.68</td>
<td>8.69</td>
<td>6.19</td>
<td>11.21</td>
<td>26.00</td>
<td>9.88</td>
<td>4.38</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>(187.5)</td>
<td>(93.5)</td>
<td>(220.7)</td>
<td>(157.2)</td>
<td>(284.7)</td>
<td>(600.4)</td>
<td>(251.0)</td>
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<td></td>
</tr>
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</table>

**How to Order**

<table>
<thead>
<tr>
<th>Size</th>
<th>Style</th>
<th>Options</th>
<th>Body and End Plugs</th>
<th>Ball &amp; Stem</th>
<th>Seats*</th>
<th>T</th>
<th>301</th>
<th>** Variations</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot;</td>
<td>4</td>
<td>Blank - none</td>
<td>1 - Bronze</td>
<td>1 - Brass stem, 316 S.S. ball</td>
<td>T - TFE</td>
<td>B - Buna</td>
<td>151</td>
<td>See below for V# listing</td>
</tr>
<tr>
<td>4&quot;</td>
<td>4</td>
<td>E - No handle, valve built for automation</td>
<td>2 - Ductile Iron</td>
<td>2 - 316 S.S. ball &amp; stem</td>
<td>R - Reinforced TFE</td>
<td>T - TFE</td>
<td>301</td>
<td>- for use between 150 ANSI flanges</td>
</tr>
<tr>
<td>6&quot;</td>
<td>4</td>
<td>L - U.L. approved (must specify service)</td>
<td>3 - Carbon Steel</td>
<td>3 - 316 S.S. ball &amp; stem</td>
<td>P - Polyfill</td>
<td>V - Viton</td>
<td>- for use between 300 ANSI flanges</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>V - Vacuum Service</td>
<td>4 - 316 S.S.</td>
<td>4 - stem &amp; ball</td>
<td>U - UHMWPE</td>
<td>Z - Graph-look</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>X - Oxygen Service</td>
<td>5 - Monel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Variations**

Blank - No Variations
V-3 - Upstream Relief Hole
V-5 - Hydrostatic Testing
V-6 - Source Inspection
V-14 - Handleless Valves

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