Worcester Control Valves

Series 818/828
Full Bore Flanged Ball Valves
Worcester’s all new full port ball valve features worldwide design standardization, fire-safety, OSHA lockout, ISO actuator mounting and best price and performance value.

### Specifications

<table>
<thead>
<tr>
<th>Sizes:</th>
<th>2&quot;, 3&quot;, 4&quot;, 6&quot;, 8&quot;</th>
</tr>
</thead>
</table>
| Standard Valve Model Numbers: | Series 818 ANSI Class 150  
Series 828 ANSI Class 300 |
| Firesafe Valve Model Numbers: | Series AF818 ANSI Class 150  
Series AF828 ANSI Class 300 |
| Body Materials: | Carbon Steel  
Stainless Steel |
| Seats: | TFE, Reinforced TFE, Polyfill® |
| Body Seal: | TFE (Graphite on AF and FZ Firesafe Valves) |
| Stem Seals: | Reinforced TFE (Graphite on AF and FZ Firesafe Valves) |
| Actuator Mounting: | ISO 5211 |
| Standards: | B16.34  
ASME B16.10 face to face dimensions  
ASME B16.5 150 lb. & 300 lb. flange dimensions  
API 6D Pipeline Valves. Specify V39 option  
API 607 Ed. 4, BS6755  
MSS SP6 flange finish (125-250 Ra)  
NACE MR0175-95  
BS5500 and ASME VIII bolt & pressure vessel codes |

Certifications to above standards are available on request. Specify when ordering.

### Actuator Mounting

- Per ISO 5211

### Anti-Blowout Stem

Ensures electrical continuity between ball and body

### OSHA Lockout

- Standard on all valves

### Standard Lockout Device

- Lock open
- Lock closed
- Lock out of the way

### Gland Nut

Does not need to be removed for actuator mounting

### Stop Plate

Visual indication of ball position

### Flange Connectors

Comply with all major international standards

### Body Seals

Fully contained; fire safe option

### Seat Design

Automatically compensates for wear and thermal fluctuations

### Anti-Static Stem

Ensures electrical continuity between ball and body

### Seats

Wide range of seat materials

### Ball

316 stainless steel ball with pressure equalizing hole to balance cavity pressure

### Body Seal

TFE (Graphite on AF and FZ Firesafe Valves)

### Stem Seals

Reinforced TFE (Graphite on AF and FZ Firesafe Valves)
Flow Control Division

Worcester Control Valves

Dimensions inches (mm)

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F (Usable Stem)</th>
<th>G</th>
<th>H</th>
<th>K (ISO MTG.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot;</td>
<td>7.00</td>
<td>2.90</td>
<td>6.16</td>
<td>5.12</td>
<td>1.68</td>
<td>.70</td>
<td>5.49</td>
<td>.787</td>
<td>10.00 F07</td>
</tr>
<tr>
<td></td>
<td>(178)</td>
<td></td>
<td>(157)</td>
<td>(130)</td>
<td>(42.7)</td>
<td>(17.8)</td>
<td>(13.9)</td>
<td>(20.0)</td>
<td>(254)</td>
</tr>
<tr>
<td>3&quot;</td>
<td>8.00</td>
<td>3.68</td>
<td>7.89</td>
<td>6.37</td>
<td>1.96</td>
<td>.88</td>
<td>5.92</td>
<td>.831</td>
<td>15.8 F07</td>
</tr>
<tr>
<td></td>
<td>(203)</td>
<td></td>
<td>(200)</td>
<td>(162)</td>
<td>(49.8)</td>
<td>(17.3)</td>
<td>(15.0)</td>
<td>(21.1)</td>
<td>(401)</td>
</tr>
<tr>
<td>4&quot;</td>
<td>9.00</td>
<td>4.61</td>
<td>9.23</td>
<td>7.67</td>
<td>2.15</td>
<td>.84</td>
<td>.758</td>
<td>1.07</td>
<td>24.0 F10</td>
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<tr>
<td></td>
<td>(229)</td>
<td></td>
<td>(234)</td>
<td>(195)</td>
<td>(54.6)</td>
<td>(21.3)</td>
<td>(19.3)</td>
<td>(27.2)</td>
<td>(610)</td>
</tr>
<tr>
<td>6&quot;</td>
<td>15.5</td>
<td>7.03</td>
<td>12.2</td>
<td>9.98</td>
<td>2.82</td>
<td>1.13</td>
<td>1.04</td>
<td>1.30</td>
<td>39.5 F12</td>
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<tr>
<td></td>
<td>(394)</td>
<td></td>
<td>(310)</td>
<td>(254)</td>
<td>(71.6)</td>
<td>(28.7)</td>
<td>(26.4)</td>
<td>(33.0)</td>
<td>(1003)</td>
</tr>
<tr>
<td>8&quot;</td>
<td>18.0</td>
<td>8.10</td>
<td>—</td>
<td>12.3</td>
<td>2.99</td>
<td>1.17</td>
<td>1.19</td>
<td>1.49</td>
<td>— F14</td>
</tr>
<tr>
<td></td>
<td>(457)</td>
<td></td>
<td></td>
<td>(313)</td>
<td>(76.0)</td>
<td>(29.7)</td>
<td>(30.2)</td>
<td>(37.9)</td>
<td></td>
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</table>

Worcester flanged valves are designed to conform to ASME B16.5-1996 standards. Selected dimensions from that publication are shown in brochure No. PB51 (Series 51/52 Valves) and Engineering Data Sheet ED-2.

Pressure/Temperature Rating

Flow Coefficient - Cv

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>Port Size inches (mm)</th>
<th>Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot;</td>
<td>2.00 (50.8)</td>
<td>501</td>
</tr>
<tr>
<td>3&quot;</td>
<td>3.00 (76.2)</td>
<td>1,158</td>
</tr>
<tr>
<td>4&quot;</td>
<td>4.00 (102)</td>
<td>2,118</td>
</tr>
<tr>
<td>6&quot;</td>
<td>6.00 (152)</td>
<td>5,047</td>
</tr>
<tr>
<td>8&quot;</td>
<td>8.00 (204)</td>
<td>9,337</td>
</tr>
</tbody>
</table>
## Parts/Materials

<table>
<thead>
<tr>
<th>No.</th>
<th>Part Name</th>
<th>Materials</th>
<th>No.</th>
<th>Part Name</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Carbon Steel ASTM-A216 WCB or ASTM-A351 CF8M</td>
<td>13</td>
<td>Body Studs</td>
<td>Carbon Steel ASTM-A193 GR. B7, Black Oxide Coated</td>
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<tr>
<td>2</td>
<td>End Connector</td>
<td>Carbon Steel ASTM-A216 WCB or ASTM-A351 CF8M</td>
<td>14</td>
<td>Body Nuts</td>
<td>Carbon Steel ASTM-A194-GR. 2H, Zinc Plated</td>
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<tr>
<td>3</td>
<td>Ball</td>
<td>Stainless Steel ASTM-A351 CF8M or ASTM A479-316, Cond. A</td>
<td>15</td>
<td>Centering Washer</td>
<td>Stainless Steel AISI 316</td>
</tr>
<tr>
<td>4</td>
<td>Stem</td>
<td>Stainless Steel ASTM-A479-316 Condition A</td>
<td>16</td>
<td>Wrench Extension</td>
<td>Carbon Steel ASTM-A53, Galvanized Stainless Steel ASTM-A312, 300 Series</td>
</tr>
<tr>
<td>5</td>
<td>Seat</td>
<td>TFE, Reinforced TFE, Polyfill</td>
<td>17</td>
<td>Wrench Block</td>
<td>Stainless Steel ASTM-A743-CF8</td>
</tr>
<tr>
<td>6</td>
<td>Body Seal</td>
<td>TFE, Z (Graphite) seal used on AF &amp; FZ valves</td>
<td>18</td>
<td>Hex Head Bolt</td>
<td>Stainless Steel AISI 300 Series</td>
</tr>
<tr>
<td>7</td>
<td>Stem Seals</td>
<td>Reinforced TFE, Graphite on AF &amp; FZ valves</td>
<td>19</td>
<td>Fixed Lockplate</td>
<td>Stainless Steel AISI 300 Series</td>
</tr>
<tr>
<td>8</td>
<td>Thrust Bearing</td>
<td>Reinforced TFE, Graphite on AF &amp; FZ valves</td>
<td>20</td>
<td>Moving Lockplate</td>
<td>Stainless Steel ASTM-A743-CF8</td>
</tr>
<tr>
<td>9</td>
<td>Follower</td>
<td>Stainless Steel ASTM-A276-316 Condition A or A269-300</td>
<td>21</td>
<td>Lock Spacer</td>
<td>Stainless Steel AISI 300 Series</td>
</tr>
<tr>
<td>10</td>
<td>Retaining Nut</td>
<td>Carbon Steel, Zinc Plated Stainless Steel AISI 303, Zinc Plated</td>
<td>22</td>
<td>Washer</td>
<td>Stainless Steel AISI 300 Series</td>
</tr>
<tr>
<td>11</td>
<td>Stop</td>
<td>Stainless Steel, 300 Series</td>
<td>23</td>
<td>Button Head Screw</td>
<td>Stainless Steel AISI 300 Series</td>
</tr>
<tr>
<td>12</td>
<td>Stop Screw</td>
<td>Stainless Steel ASTM-A276, 300 Series</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### How To Order

#### Valve Options

- **Blank, No Options**
- **J** - No handle, valve built for automation
- **V** - Clean for vacuum service
- **X** - Clean for oxygen service
- **2** - Blank, Standard
- **AF** - Firesafe
- **FZ** - Firesafe

#### Design

- **818** - Class 150
- **828** - Class 300
- **6** - Carbon Steel
- **66** - 316 Stainless Steel
- **R** - Reinforced TFE
- **T** - TFE

#### Body Size

- 2" - Blank, No Options
- 3" - Blank, Standard
- 4" - Blank, Standard
- 6" - Blank, Standard
- 8" - Blank, Standard

#### Body Seals

- **T** - TFE
- **R** - Reinforced TFE
- **P** - Polyfill

#### End Connection

- **150** - ANSI 150# Flanges
- **300** - ANSI 300# Flanges

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* 2" valves only.
** Use only one letter if body seal is same material as seat.
† AF and FZ fire safe valves only available with Z body seals.

**Note:** Standard Worcester Valves are assembled with silicon based break in lubricant. For other options, consult your distributor.

**Ordering Example:** A 3" Series 818 full port flanged valve with carbon steel body, 316 stainless steel ball and stem, reinforced TFE seats, TFE body seal, ANSI Class 150 flanges and manual lever or handle.

**Caution:** Ball valves can retain pressurized media in the body cavity when closed. Use care when disassembling. Always open valve to relieve pressure prior to disassembly.

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