Metal Seated Ball Valves

- Chemical
- Petrochemical
- Mining
- Oil & Gas
- Power Generation
- Pulp & Paper
- Refining
Metal Seated Ball Valves
for high temperature, abrasive, and severe service applications

The seat is coated and lapped to match ball, creating a positive seal.

Design Features:

- 1/2" through 10", 150# through 1500# class available
- Design capabilities to provide custom valve configurations to address severe service applications including thermal expansion
- Quick ship 1/2" through 4” split body ANSI Class 150/300 and 3-piece design 2-Way and 3-Way Diverter Valves
- Temps up to 1000°F/538°C
- Class V shut-off, Class VI available as an option with limited cycle life
- Live-loaded packing assures long maintenance-free operation
- PBM’s metal seated valves are fundamentally firesafe
- Valves with weld end fittings can be welded without disassembly
- Optional patented locking lever handle or gear operator and complete line of automation and controls
- Complete repair services available - fast turn around on valve repair
- SIL-3 capable per IEC 61508
- Extended handles and automation brackets available for higher temperature services
- Optional API622 packing design available to address Low-E requirements up to 800°F
- Stem design, sizing torque, and pinned rigid actuator linkage per application eliminate stem twist and ensure alignment in high torque applications

PBM’s Metal Seated Valve Applications Include:
Metal Seated Valve Applications include steam service, high temperature/pressure service, abrasion resistance and modulating service.

- High Temperature Up To 1,000°F
- Corrosive Medias
- Erosive Medias
- Steam Service
- Abrasive Medias
- Modulation Service (for specific applications)
Specially designed carbide and/or ceramic thermal spray coatings are a valve industry standard. All of the coatings are applied robotically in the USA, using the Accuraspray Plume Sensor System, to insure consistently high quality coatings.

Coating Options:

Chrome Carbide, 20% Nickel/Chrome
A hard coating that does not oxidize at high temperatures. Provides good abrasion, particle erosion cavitation and fretting resistance in high temperature environments. Good corrosion resistance and sliding properties.

Tungsten Carbide, 10% Nickel
A hard, dense coating to resist high abrasive conditions, as well as particle erosion and fretting while providing the corrosion resistance of nickel with minimal loss of heat resistance.

<table>
<thead>
<tr>
<th>CHROME CARBIDE</th>
<th>TYPICAL COMPOSITION, WT%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel Chrome</td>
<td>20%</td>
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<tr>
<td>Chrome Carbide</td>
<td>Balance</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>TUNGSTEN CARBIDE</th>
<th>TYPICAL COMPOSITION, WT%</th>
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</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>3.7%</td>
</tr>
<tr>
<td>Iron</td>
<td>0.5%</td>
</tr>
<tr>
<td>Nickel</td>
<td>10.0%</td>
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<tr>
<td>Tungsten Carbide</td>
<td>Balance</td>
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<table>
<thead>
<tr>
<th>COATING CHARACTERISTICS</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Bond Strength, PSI</td>
<td>&gt;10,000/690 bar</td>
</tr>
<tr>
<td>Hardness</td>
<td>67</td>
</tr>
<tr>
<td>Porosity</td>
<td>2%</td>
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<tr>
<td>Max. Service Temperature</td>
<td>1000°F/538°C</td>
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<tr>
<td>Bond Strength, PSI</td>
<td>&gt;10,000/690 bar</td>
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<tr>
<td>Hardness</td>
<td>65-58 RC</td>
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<tr>
<td>Porosity</td>
<td>&lt;1%</td>
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<tr>
<td>Max. Service Temperature</td>
<td>800°F/427°C</td>
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</tbody>
</table>

- Thermal Spray Coating applied to noted surfaces
- Ground & lapped surfaces
- Excellent sealing between ball and seats
- Anti-galling coating

Special Applications

PBM’s Special Application Valves can solve unique or challenging processing problems.
Coating Testing

- Bond Strength Tensile Test
- Shear Strength Tensile Test
- Macro Hardness Rockwell Test
- Porosity Determination
- Bond Line Contamination
- Abrasion Wear Testing

Thermal Spray Coatings

We can offer various thermal spray coatings for your corrosion and wear resistance needs. The fully automated thermal spray system offers high level consistency in the thermal spray process. We also utilize a large amount of exotic alloys.

How To Order:

Request a PBM application inquiry sheet to ensure the right valve for your applications. Find this sheet on our website: www.pbmvalve.com/metal-seated-ball-valves or scan the QR Code below.