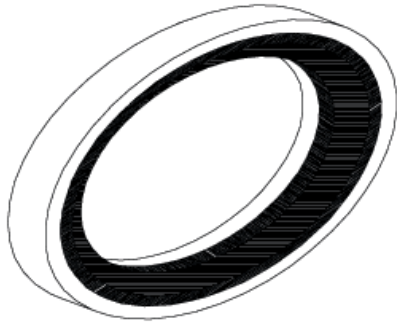




CARBON/GRAPHITE SEATED VALVES for High Temperature Liquid Applications



The seat is enclosed within an outer metal band that maintains the Carbon/Graphite in a strong compressive state.

Selecting the proper seal design is critical. A failed seal can damage expensive equipment and result in costly repairs, maintenance and downtime. Because of carbon and graphite's natural characteristics, it is often used as a seal material. When carbon/graphite and metal rub together, a microscopically thin low-friction film is created. This film prevents the interface from heating up if it becomes dry during rubbing. In addition, carbon has the benefit of being nearly chemically inert and self lubricating.

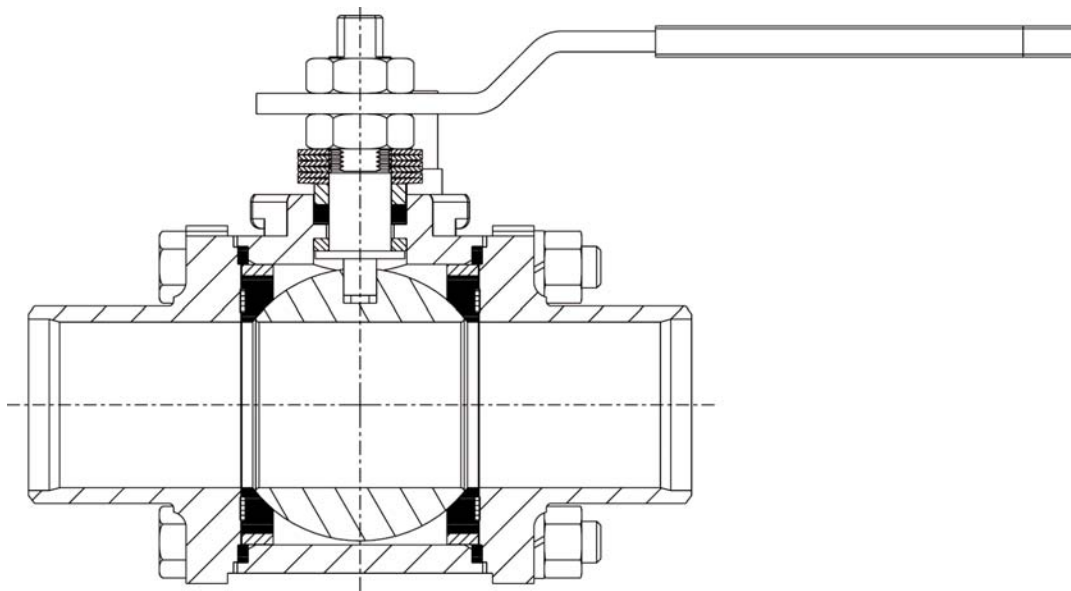
Carbon/Graphite is relatively unaffected by temperature or temperature swings. Therefore, distortion caused by swelling with heat, or contracting with cooling, is virtually eliminated. PBM's Carbon/Graphite-seated valves can handle temperatures up to 700°F.

PBM's Carbon/Graphite-seated valves have successfully passed a 10,000-cycle hot oil test at 650°F, demonstrating the valve's suitability for use with hot liquids, including heat transfer oils.

Carbon/Graphite seats are also ideal in high flow applications that may distort or tear seats made of some other seat materials.

CARBON/GRAPHITE-SEATED VALVES ARE DESIGNED FOR USE IN APPLICATIONS SUCH AS:

- Heat transfer fluid service
- High temperature/pressure liquids, from water to polymers.
- Temperature swing applications, from start-up to 700°F.



FEATURES	BENEFITS
PBM Standard	Style to suit the application: Two-way, Flush Tank, ANSI, Diverter Port, and Multi-Port.
Testing	Seats are tested with water to meet ANSI/FCI 70-2 Class V requirements.
Sizes	$\frac{1}{2}$ " - 8" for 2-way and Flush Tank Valves, $\frac{1}{2}$ " - 6" for Diverter Port Ball Valves and AN Series Ball Valves, and $\frac{1}{2}$ " - 6" for Multi-Port Ball Valves.
End Fittings	Threaded, welded, and 150# and 300# flanged.
Ratings	Depending upon end fitting style, body material, and size, pressure ratings are as high as 650 psig at 700°F.
Graphite Stem Packing	Die-molded graphite compliments the chemical inertness of the seats. Live-loaded stem packing increases stability in temperature swing applications.
Body Seals	Metal O-ring or graphite gasket assures leak-tightness and flexibility during temperature swings.
Stem	Select sizes include special 17-4PH stainless steel stem to accommodate higher stem torques.
Extended Stem and/or Bracket	To allow space for insulation in high temperature applications, manual valves can be provided with a 2" or 4" extended stem, and actuated valves with an extended bracket and coupling.
Favorable Expansion Rates	Carbon/Graphite expands slightly less than the surrounding metal, thus avoiding torque build-up at elevated temperatures.
No Swelling	Unlike some polymer-based seals, Carbon/Graphite doesn't swell when exposed to fluids.
Chemical Stability	Carbon/Graphite is chemically inert in most environments, except those that are strongly oxidizing.
Materials	Carbon/Graphite seated valves are available in 316 S/S, Carbon Steel, and other alloys.

Note: PBM Valves cannot be field-retrofitted with Carbon/Graphite seats.
 Due to non-resiliency of Carbon/Graphite, PBM's Carbon/Graphite seated valves are a non-Adjust-O-Seal® design.