

VALVE SOLUTIONS

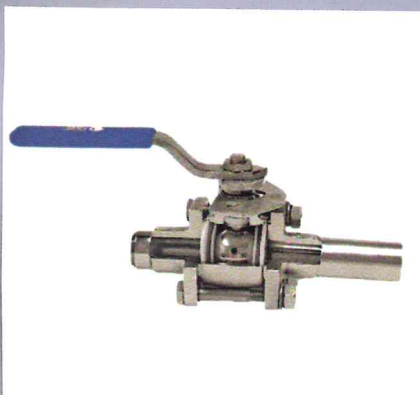
PHARMACEUTICAL

PBM'S LINE OF IGENIX® SANITARY VALVES IS IDEAL FOR PURE PROCESS APPLICATIONS AND SANITARY VALIDATION SYSTEMS. THESE VALVES MINIMIZE CONTAMINATION, FACILITATE CLEAN-IN-PLACE, OBTAIN MAXIMUM YIELD, HANDLE ELEVATED TEMPERATURES AND STEAM REQUIREMENTS, SOLVE CLOGGING PROBLEMS, AND REDUCE DOWNTIME, MAINTENANCE AND COST.

BALL VALVES REPLACE DIAPHRAGM VALVES IN SOME SANITARY APPLICATIONS

Pharmaceutical and cosmetics companies have often relied on diaphragm valves to handle their sanitary applications. However, PBM ball valves are an ideal replacement for many sanitary applications traditionally reserved for diaphragm valves. And, PBM ball valves provide more features and better flow capacity, all at a better price.

PBM's Igenix® Series 5 line of sanitary ball valves features the exclusive Adjust-O-Seal® design, which not only allows inline adjustment for normal valve seat wear, but also enables Clean-In-Place and Steam-In-Place without process interruption. Only PBM can offer



this CIP/SIP feature, which uses purge ports, milled ball flats, and ball purge holes to suit application needs. PBM offers various seat and seal material options for sanitary, clean steam, and temperature swing applications. Body cavity fillers are also available for applications that require that little or no media enter the body cavity. The True-Bore port design is standard on all Igenix sanitary valves.

STEAM TRAP VALVE SOLVES CONDENSATE PROBLEMS

Stagnate condensate can promote bacteria growth and cause considerable damage to high purity products, such as those found in many pharmaceutical applications. When steam is in use, the point of use valve cools due to condensate build-up. Ideal conditions exist for bacterial growth.

Then, when the valve is opened, cold condensate drains into the tubing before the pure steam, contaminating the sample. Bacteria may be killed, but pyrogens still remain. PBM's Pure Steam Trap Valve is a 2-Way sanitary valve that uses a side body purge port and ball purge holes to direct flow to the trap while shutting off flow downstream. This allows the steam valve to open without the initial rush of water usually experienced.



This permits sampling of steam for purity and safety isolates trap for ease of maintenance. While some assemblies require multiple valves, PBM's Steam Trap is a single valve that performs three functions, saving both space and cost. True-Bore® port design, standard on the steam trap valve, minimizes pockets and dead space in the through path, and prevents puddling where contamination could occur. Vertical or horizontal installation and various actuation packages are available.

STEAM VALVES HANDLE HIGH TEMPERATURE APPLICATIONS

PBM valves in steam or fluctuating temperature service are intended for the maximum temperatures and pressures listed.

	Temperature	Pressure
TFM™	370	160
S-TEF®	394	215
PEEK	453	420

PBM's Igenix Sanitary Steam ball valves are designed to accommodate the high temperature requirements (above 200°F) and temperature swings of clean steam and other elevated temperature applications. PBM's Steam valves feature:

- Metal-encapsulated ring that minimizes "tear-dropping" or seat flow due to heat softening the seat and dragging it into the process stream. O-ring primary body seals to provide a tight seal, preventing leakage.

- Metal-encapsulated secondary body seal to eliminate cold flow (compression deforming the seal) and reduce recesses where media could accumulate and contaminate the process.
- Belleville washers on body bolts to maintain pre-load on body bolts.
- Enhanced live-loaded stem packing design to provide compensation for wear and differential thermal expansion. Optional body cavity fillers to minimize body cavity voids. Optional extended stem to allow space to clear insulation.

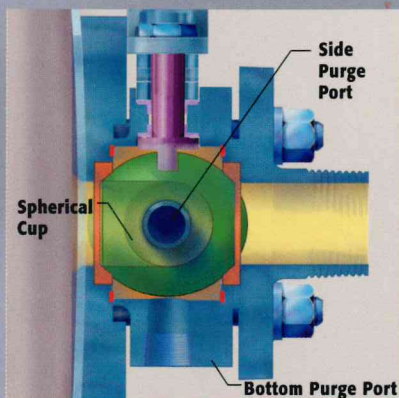
- Optional CIP/SIP capability, either with a one-piece seat/gasket or, for service above 200°F, a two-piece seat/gasket design. PBM's CIP/SIP valves use a combination of inlet and outlet body purge ports, and a ball with either milled flats or purge holes to suit specific application needs.

PBM Steam valves are available in Two-Way, Flush Tank, and Diverter Port Styles.

**SELF-CLEANING
SPHERICAL CUP
BALL VALVE MAKES
SAMPLING EASY**

Thick paste-like materials can often cake inside a valve and make sampling difficult. However, PBM's Self-Cleaning, Spherical Cup Flush Tank ball valve can ensure quality samples each time with ease.

Unlike most ball valves, this specially designed valve features a hole three-quarters of the way through the ball, which forms a small sampling cup. During the mixing process, the cup faces the inside of the tank and collects the paste-like



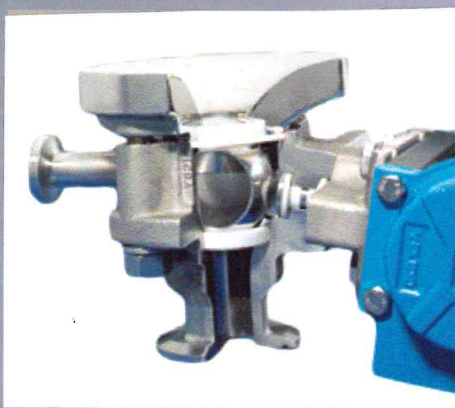
media. When the ball is rotated 180°, a sample can be extracted from the cup. When rotated 90° to face one of two purge ports, the valve can be cleaned-in-place. PBM's Adjust-O-Seal feature also

ensures that no cleaning solution or paste from the sample cup drains through the end fitting while the cup is being purged and drained.

**FLUSH TANK
BALL VALVE
KEEPS MEDIA
FLOWING
SMOOTHLY**

During mixing and processing, dead space between the bottom of a tank and the shutoff point of a valve can cause media to build up. This can clog the valve or cause contamination of the process. These problems can be costly and sometimes dangerous, especially when dealing with alcohol-based or other highly flammable additives.

PBM's Flush Tank and Angle Stem Flush Tank ball valves can be provided with a pad that



is designed to weld flush to the inside surface of the tank. This enables the ball to be positioned in a way that virtually eliminates dead space.

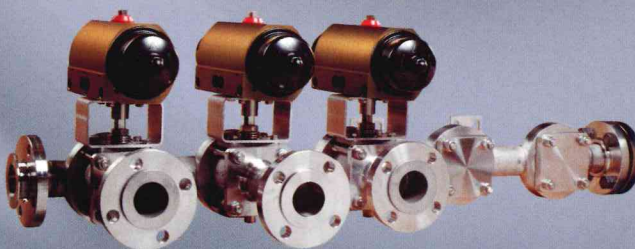
The Angle Stem Flush Tank ball valve is ideal for applications involving jacketed or insulated tanks

because it allows the actuator to clear the tank and provides easy valve access. This valve also meets or exceeds API-607, Edition 4, Fire-Test design standards, making it ideal for use with highly volatile media.

**SPACE-SAVING
FABFLEX®
ASSEMBLIES
SOLVE MULTIPLE
PROBLEMS**

During batch processing, the ability to vary the additives used per batch and prevent contamination is crucial to both production time and product integrity.

PBM's Fabflex valve and manifold assembly provide an efficient way to satisfy multiple requirements at a single point in the process



line. The header assembly can be supplied in lengths of up to 18' and can accommodate multiple valve configurations with its unique space-saving design. Specially designed cylindrical radius end fitting pads reduce dead

space and prevent product contamination. Available in a variety of materials, including 316L Stainless Steel, the Fabflex assembly is ideal for sanitary applications.

**PBM HAS SOLUTIONS FOR
YOUR VALVE APPLICATIONS.**

PBM RECOGNIZES THAT MANY VALVE APPLICATIONS ARE UNIQUE AND OFTEN HAVE SPECIAL PROBLEMS. PBM COMBINES SPECIFIC APPLICATION REQUIREMENTS WITH CREATIVE ENGINEERING AND QUALITY MANUFACTURING PRACTICES. ADD TO THAT PBM'S COMMITMENT TO QUALITY SERVICE, AND THE RESULT IS SATISFACTION FOR YOU... OUR CUSTOMER.

PBM VALVES OFFER THE CONVENIENCE OF STANDARD FEATURES WITH THE OPTION TO CUSTOMIZE A VALVE FOR A SPECIFIC APPLICATION. MOST PBM VALVES INCORPORATE PBM'S ADJUST-O-SEAL® DESIGN, AND ONLY PBM HAS THE ABILITY TO PROVIDE CLEAN-IN-PLACE/STEAM-IN-PLACE CAPABILITY WITHOUT PROCESS INTERRUPTION.

PBM HANDLES TOUGH VALVE APPLICATION PROBLEMS... JUST LIKE YOURS.



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