



PHANTOM PORT BALLS

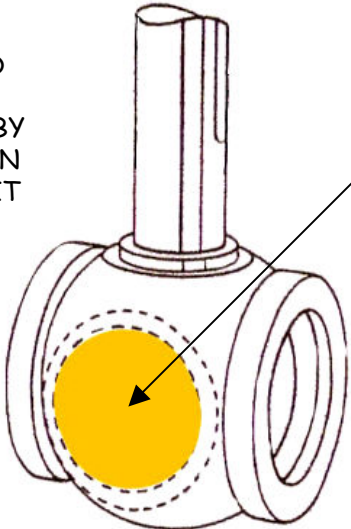
JARECKI PATENTED



An Improved Design for Users of Ball Valves As Shut-off Valves Handling Corrosive Fluids

Jarecki Valves can provide a service to users of Ball Valves for shut-off that will extend seat life and allow free turning over a longer time period and reduce costly down time.

YELLOW AREA IS AFFECTED AREA DAMAGED BY CORROSION OR DEPOSIT BUILD-UP

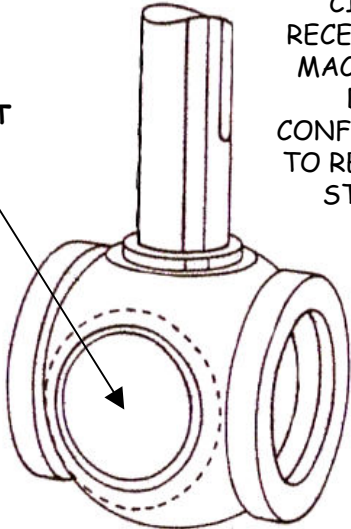


BEFORE PHANTOM-PORT MODIFICATION SHOWING DAMAGED AREA

PHANTOM-PORT MODIFICATION

DOTTED LINES REPRESENT SEAT BOUNDRIES

CIRCULAR RECESSED AREA MACHINED TO DOMED CONFIGURATION TO RETAIN BALL STRENGTH



AFTER PHANTOM-PORT MODIFICATION SHOWING DAMAGED AREA REMOVED

Two Common Problems with Ball Valves that Handle Corrosive Media

Ball Pitting

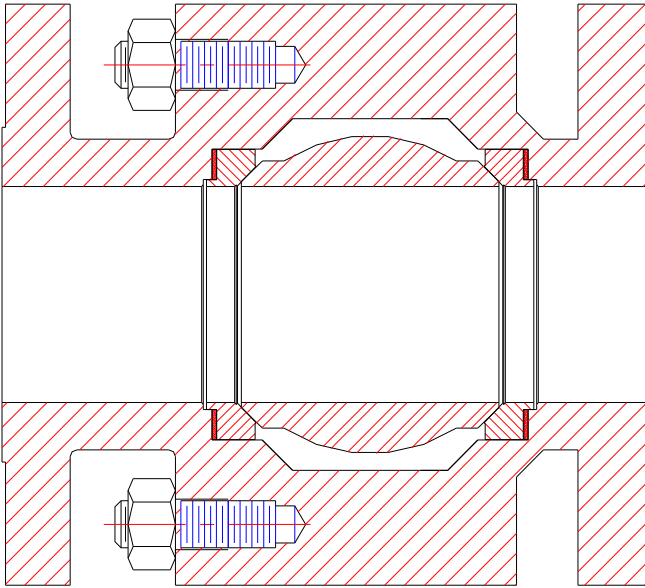
With the valve in the closed position, the ball face which is exposed upstream to the corrosive attack of gasses and fluids tends to pit within the area of the ball bounded by the valve seat causing the critical smooth surface finish to become rough. Because the ball is fitted with zero clearance to the seats, any roughness or protrusions cause by corrosive attack will damage the valve seats when the ball is rotated. Once the seats are damaged, effective sealing is lost. Continued cycling increases seat damage.

Fluid Deposits

Valves that handle fluids and gasses that tend to deposit crustations or leave residue on the inner valve surfaces will become hard to operate. With the Ball Valve in the closed position for lengthy time periods, the buildup of deposits adhere to the ball face within the seat boundaries causing interference with the valve seats during attempts to cycle the valve. Only a few thousandths deposit on the ball face will increase turning torque and damage the seats. Excessive crustations or residue on the ball face will make the valve inoperative.

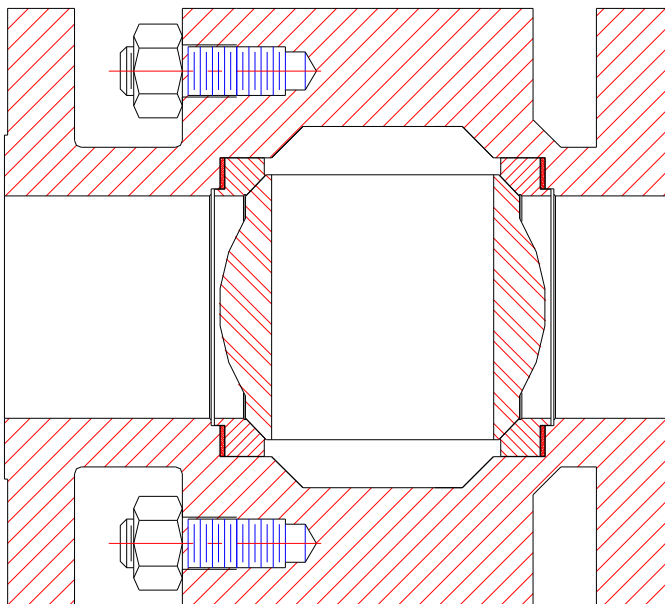
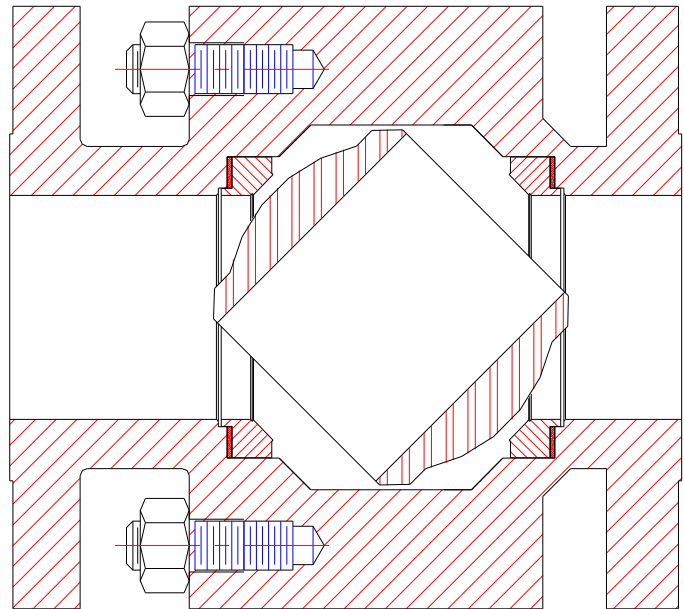
Either of these two conditions becomes a serious problem when a valve does not function on demand or leaks when shut-off is required

Jarecki Valves, a respected name in the valve industry, recognized these two frustrating problems through observations in the field and provides our customers with an improved ball valve design. This ball design is such that the portions of the ball surface, which would be exposed to the fluid in line when the valve is closed, are recessed. These portions have bottoms of smaller diameter than the inside diameter of the seats for the ball. Therefore, the surface that has been exposed to liquid while the valve was closed cannot contact the valve seats during the turning cycle of the ball in the valve body either moving from closed to open or open to closed position.



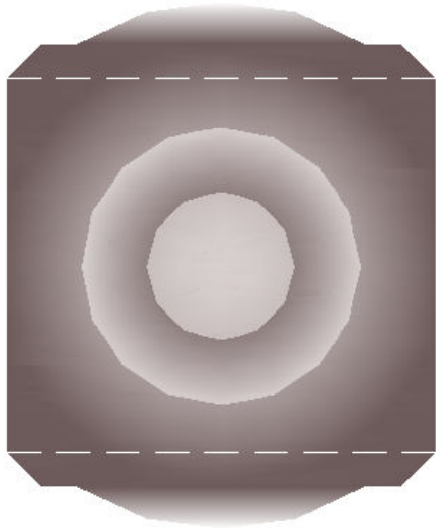
When the ball is fully closed or fully open, sealing is accomplished where the ball seating surfaces mate with the seats on the sealing rings.

The exposed recess face of the ball may accumulate foreign material over the domed surface, such as scale or corrosive pitting of the surface itself or film deposits which may occur during use.



Such material will accumulate in the recessed surfaces thus preventing seat damage or excessive turning torque which would otherwise be caused by interference of the working surfaces of the ball and the rings.

TOP VIEW



The sides of the ball are recessed and domed about a diameter less than the diameter of the ball.

SIDE VIEW



FRONTAL VIEW



