

FULLY LINED VALVES FOR SULFURIC ACID SERVICES



Application Description:

The use of concentrated sulfuric acid for pH control in water and wastewater treatment, agriculture, bio-energy and chemical processes is often the best choice due to the ready availability, low cost and effectiveness of this acid. For example, in the pulp and paper industry, the sulfuric acid is used to adjust the pH of the chlorine dioxide being generated for the bleach towers. Handling and injection of the acid requires some special considerations for all valves currently being used in the concentrated sulfuric acid injection systems.

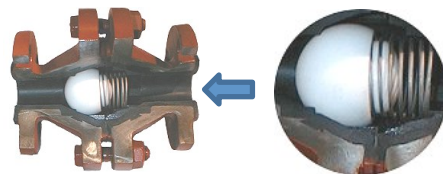
Issues with Application:

- Lack of tight shut off from the check valves. Sulfuric acid has a great affinity for water. It will “draw through” the check valve the water (or process fluid) from the mixing tee side if there is not enough “seat load” to assure tight shut off of the check valve.
- Control valves being used are not providing the best range of control for this difficult application.

ChemValve Solutions:

- ChemValve recommends our model 880SHC fully lined ball check valve with a high rate spring that requires 10 psi of differential pressure across the check valve, in the normal “flow” direction, to crack the ball off the seat. This insures that when the check valve in the closed position, it will have adequate “seat load” to prevent the migration of water back into the sulfuric acid. ChemValve also recommends our PFA liner material for the concentrated sulfuric acid valves due to the possible heat build up from this application.
- In chlorine dioxide service, ChemValve recommends that the spring for the check valves be made of titanium. Hastelloy C has cannot stand up over time in the chlorine dioxide service. ChemValve also recommends the PVDF (Kynar) liner material for the dilute sulfuric acid service if the process fluid is chlorine dioxide to leaching through the liner.
- Control valves used in these applications will normally require a large rangeability valve. ChemValve can handle this with our Model 790EB-150 with our V-Port seat design.

MODEL 880SHC



MODEL 790EB V-PORT SEAT

