

3-WAY BALL VALVES

ANCORP's 3-way ball valve is designed to divert flow between a common port and either of two side ports. Fluoroelastomers are used to seal the stem and end caps from atmosphere while Teflon® seats cold flow around the ball to isolate one port while diverting flow through the other.

Features

- Reduced BOM, footprint, design complexity and overall weight.
- Less total area to heat
- Reduced maintenance costs from MRO parts



HIGH VACUUM BALL VALVES

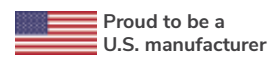
BALL VALVE SERIES	END CAP TUBE O.D.	FLANGE TYPE
B SERIES BALL VALVE	.75"	QF16, QF25
C SERIES BALL VALVE	1"	QF25
D SERIES BALL VALVE	1.5"	QF40
E/F SERIES BALL VALVE	2"	QF50
HIGH CONDUCTANCE BALL VALVE	2.5", 3", 4"	LF63, LF80, LF100
3-WAY BALL VALVE	1.5", 2"	QF40, QF50

Schedule your consultation today with our application engineers. 1-800-352-6431

PATENTED FULLY STABILIZED STEM DESIGN

XL Stem Design minimizes wetted components

A&N CORPORATION US PATENTS:
US 8,496,227 B2, US 8,905,375 B2, US 8,936,231 B2



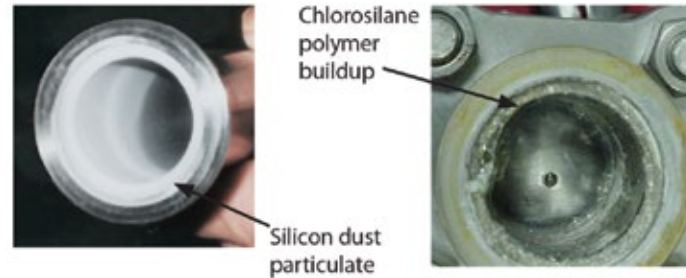
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High Vacuum Components Online

HEAT TREATING	CRYOGENICS	NANOTECHNOLOGY	SEMICONDUCTOR	PARTICLE PHYSICS	MASS SPECTROMETRY	THIN FILM DEPOSITION	MOCVD
FEEDTHROUGHS	COUPLINGS	CUSTOM FABRICATION	HYBRID ADAPTERS	CUSTOM CHAMBERS	VALVES	VACUSHIELD TRAPS	FITTINGS

HIGH VACUUM BALL VALVES Empowering Transformative Science and Technology

PROCESS CHALLENGES

Byproduct buildup is one of the major challenges of many coating operations in which metals, plastics or glass are deposited in vapor form inside and around chambers, valves and other vacuum components. The buildup of these particles greatly reduces efficiency of the application process leading to valve failure.



Conductance Limiters such as: Chlorosilane polymers, Siloxane polymers and Silicon dust contribute to byproduct buildup.

The Solution to Byproduct Buildup:

Foreline/Exhaust temperatures range from 80° C to > 250° C

High Throughput

Process uptime critical to reduce cost.

ANCORP'S ENGINEERED SOLUTIONS FOR PROCESS CHALLENGES:

Extended Life (XL) Ball Valves

When leading OEM's came to ANCORP looking for a more durable valve for today's harsh coating processes, our engineers went to work testing new stem designs - the Extended Life (XL) Stem Design was born. This new patented design extends the stem seal life by 10X, has fewer wetted components, and a fully stabilized stem along with all the other features of ANCORP ball valves. In short, the XL ball valve reduces valve maintenance, reduces tool downtime, and increases throughput. It's one of the main reasons ANCORP remains the leading innovator in high vacuum ball valves.

Each ball valve consists of a body, stem, ball and two end caps machined from corrosive resistant 316L stainless steel. Fluoroelastomers are used to seal the stem and end caps from atmosphere while the Teflon® PTFE seats cold flow around the ball to isolate the process when closed. The valve is opened and closed manually or pneumatically by 1/4 turn, quick actuation. The Teflon® sealing surface is protected from direct deposition, maintaining a clean dynamic seal

INSTALL CHALLENGES

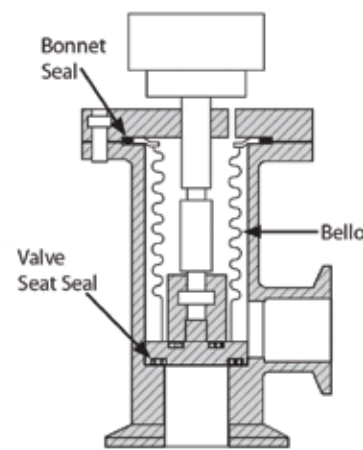
Poppet Valve

- Byproducts can etch/crack bellows
- Sealing surface can accumulate byproduct

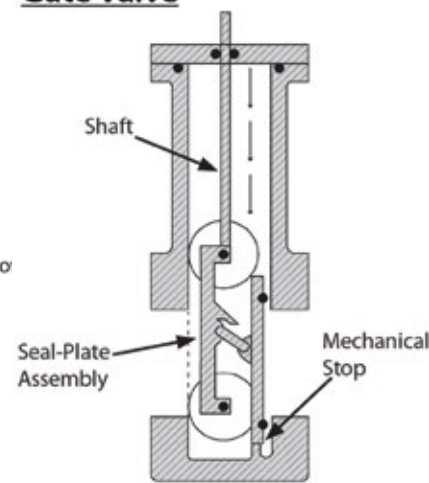
Gate Valve

- Numerous surfaces for byproduct to collect
- Sealing surface can accumulate byproduct
- Complicated internals

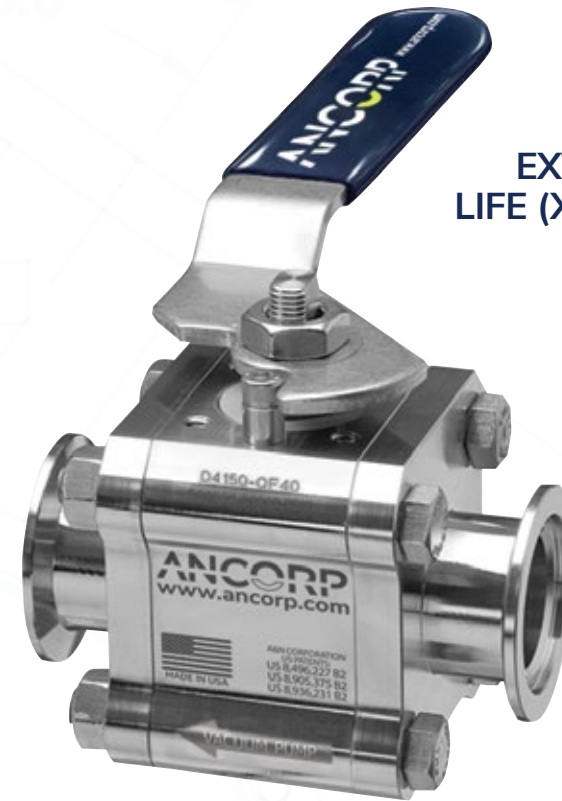
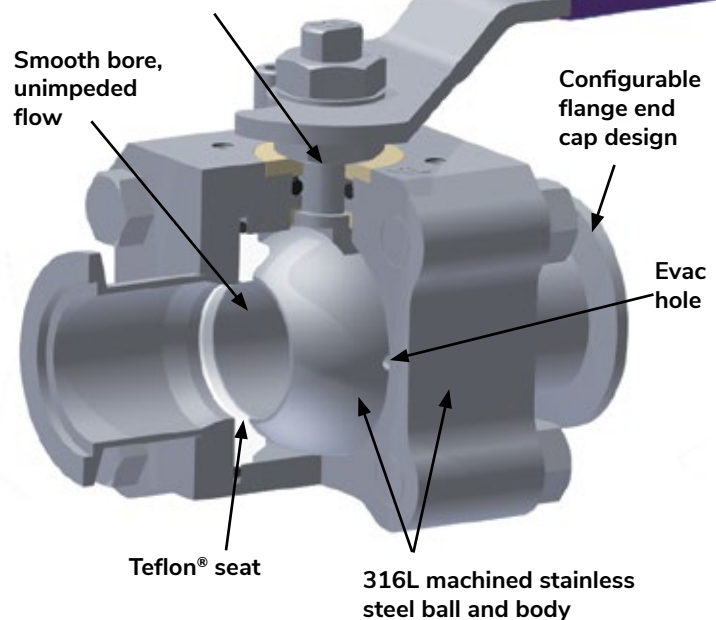
Poppet Valve



Gate Valve



ANCORP'S PATENTED FULLY STABILIZED STEM DESIGN



EXTENDED LIFE (XL) BALL VALVES

that prevents failure due to contamination. This feature reduces particulate build-up, making this valve robust in particle-rich effluent streams.

Due to their unique design, ball valves are less sensitive than other vacuum valves to particulate contamination; therefore, they are especially useful in vacuum applications with high amounts of particulate effluent. For example, ball valves are almost always used to isolate scrubbers and traps.

Some applications require seals and grease that have higher temperature tolerances or more chemical resistance. ANCORP engineers commonly work with OEM's and end-users to find the right seals and grease for their application. Various Kalrez and Chemraz seal compounds are often used in place of the standard fluoroelastomer seal. XL ball valves, like all ANCORP ball valves, come standard with fluoroelastomer body and stem o-rings and Dow Corning® High Vacuum Grease.

Applications

The corrosive resistant design of ANCORP's vacuum ball valves makes them ideal for isolating reactors, traps, and scrubbers on vacuum process tools.

Specifications

- Vacuum Rating: 1×10^{-8} Torr
- Helium Leak Rated $< 1 \times 10^{-9}$ std. cc/s
- Temperature Rating: -26° C to 150° C

Features

- Valve body, ball, stem and end caps: machined from solid 316L stainless steel
- Standard Seals: Fluoroelastomer
- Seats: Teflon® PTFE
- Bearing: PEEK
- Rugged construction with few wetted components
- 1/4 Turn Actuation
- Fewer actuated components and leak paths
- Ball and seat design reduces particulate buildup



HIGH CONDUCTANCE (HC) BALL VALVES

ANCORP's High Conductance (HC) Vacuum Ball Valve is the latest and largest addition to the patented Extended Life ball valve series. The HC provides maximum conductance with its fully ported ball and reduced overall length, two-piece 316L stainless steel body. Its improved smooth contour maximizes heat transfer between the valve and heating components. The HC Ball Valve is manufactured from corrosive resistant materials to perform very effectively in aggressive processes and on exhaust lines. This valve can be configured to be heated and insulated for temperature stability inside the valve. Body and stem seals can be changed to meet customer specific processes as required.

This valve also works exceptionally well in systems that create deposition within the vacuum lines. The Teflon® sealing surface is protected from direct deposition, maintaining a clean dynamic seal to prevent failure due to contamination. The HC Ball Valve is an extremely robust high vacuum valve designed to perform in the most challenging of environments.