

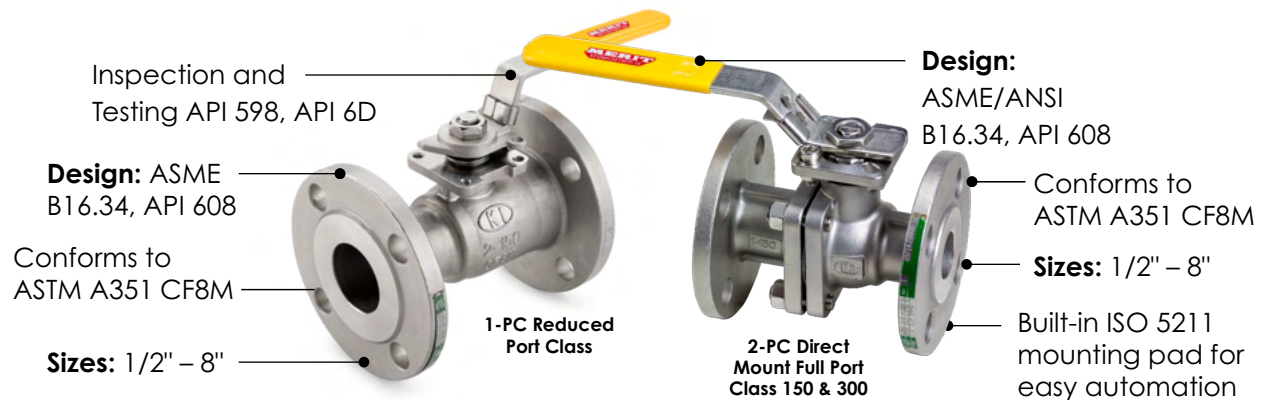


MERIT'S COMPREHENSIVE PACKAGE

- PTFE Seals & Ball Seat
TFM1600/PTFE/RTFE

STAINLESS STEEL BALL VALVES

Flanged End





MERIT'S COMPREHENSIVE PACKAGE

- Casting approved by TÜV AD 2000 - Merkblatt W0
- **Design:** ASME B16.34, MSS SP-110

STAINLESS STEEL BALL VALVES

"K" Series

ASTM A351 CF8M
(316 SS) with PTFE seats

Sizes: 1/4" – 3"
with NPT
threaded
ends & socket
weld ends



3-PC Full Port



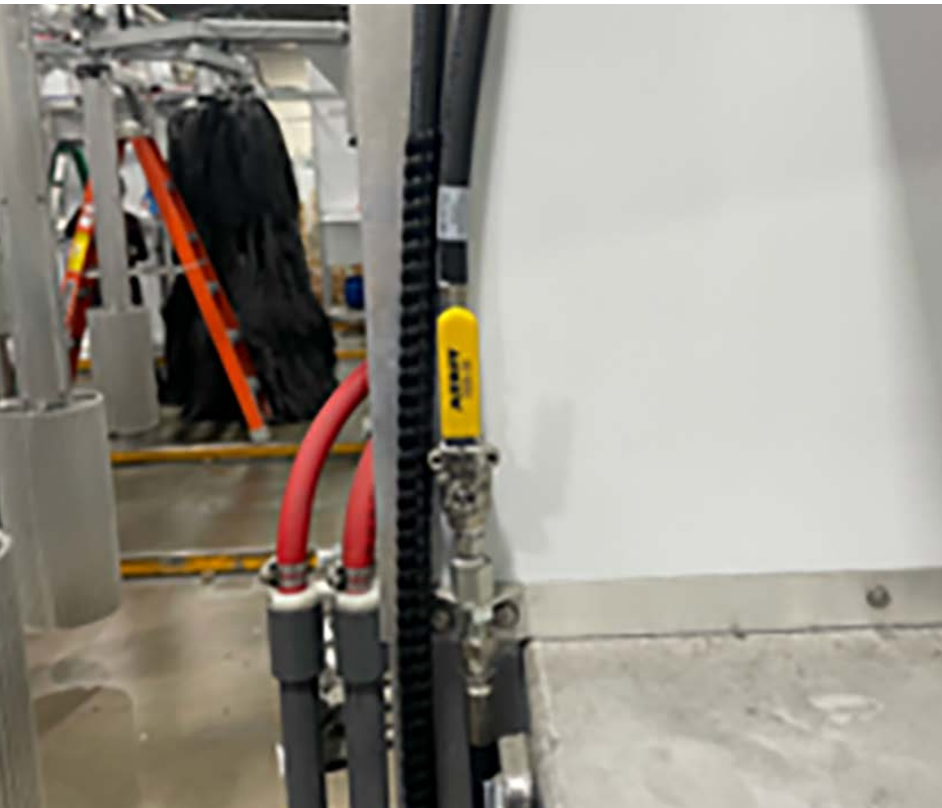
1-PC 1000 WOG
Reduced Port



2-PC 1000 WOG
Full Port

Sizes: 1/4" – 2"
with NPT
threaded ends

Sizes: 1/4" – 3"
with NPT
threaded ends



MERIT'S COMPREHENSIVE PACKAGE

- ASTM A351 CF8M (316 SS) with PTFE seats

STAINLESS STEEL BALL VALVES

"V" Series

Size Range: 1/4" – 2" with NPT threaded ends



1-PC Reduced Port
800 WOG

Size Range: 1/4" – 3" with NPT threaded ends



2-PC Full Port
1000 WOG

Size Range: 1/4" – 1" & 1-1/4" – 2" with NPT threaded ends



2-PC 2000 WOG Standard Port &
2-PC 1500 WOG Reduced Port

Size Range: 1/4" – 3" with NPT threaded ends & socket weld ends



3-PC Full Port 1000 WOG
Threaded & Socked Weld

STAINLESS STEEL VALVES GENERAL BENEFITS

Stainless steel ball valves are widely used in piping, valves, and fittings (PVF) installations due to their durability, corrosion resistance, and reliable flow control. The benefits of stainless steel ball valves, combined with specific end connection types (flanged end, threaded, and socket weld), enhance their suitability for various applications. Below, I outline the benefits of stainless steel ball valves and the specific advantages and applications of each end connection type.



Corrosion Resistance

Stainless steel resists rust and corrosion, making these valves ideal for harsh environments involving water, chemicals, or saline conditions.



Ease of Operation

Quarter-turn operation (90-degree rotation) allows quick opening and closing, ideal for applications requiring rapid flow control.



Durability and Longevity

The robust material withstands high pressure, temperature, and mechanical stress, ensuring a long service life with minimal maintenance.



Hygienic Properties

Stainless steel's non-porous surface prevents contamination, making it suitable for sanitary applications like pharmaceuticals and food processing.



Tight Shut-Off

Ball valves provide a reliable, leak-proof seal when closed, suitable for critical applications requiring complete flow isolation.



High Temperature and Pressure Tolerance

Stainless steel ball valves can handle extreme conditions, ensuring reliability in demanding systems like steam or high-pressure gas lines.



Low Flow Resistance

The full-bore design (in full-port ball valves) allows unobstructed flow, minimizing pressure drop and improving system efficiency.



Versatility

Compatible with a wide range of fluids (liquids, gases, and slurries), making them suitable for diverse industries like oil and gas, chemical processing, and food production.

BENEFITS & APPLICATIONS BY END CONNECTION TYPE

Flanged End Stainless Steel Ball Valves

Benefits

- **Secure and Leak-Proof Connection:** Flanged ends use bolts to connect the valve to the piping, ensuring a strong, leak-resistant joint suitable for high-pressure systems.
- **Easy Installation and Removal:** Flanges allow for straightforward assembly and disassembly, facilitating maintenance or replacement without cutting the pipe.
- **Standardized Compatibility:** Flanged valves conform to standards (e.g., ANSI, DIN), ensuring compatibility with existing piping systems in industrial settings.
- **High-Pressure and Large-Diameter Suitability:** Ideal for large pipelines and high-pressure applications due to the robust connection.
- **Vibration Resistance:** The bolted connection, and associated flange gaskets, withstand vibrations, making it suitable for dynamic systems.



Applications

- **Oil and Gas Pipelines:** Used in upstream, midstream, and downstream operations for controlling crude oil, natural gas, or refined products in large-diameter, high-pressure pipelines.
- **Chemical Processing:** Handles corrosive chemicals in refineries and chemical plants where secure, leak-proof connections are critical.
- **Power Generation:** Employed in steam, cooling water, or feedwater systems in thermal or nuclear power plants due to their ability to handle high temperatures and pressures.
- **Water Treatment:** Used in municipal water and wastewater systems for isolating large pipelines during maintenance.
- **Marine Systems:** Applied in shipboard piping for ballast water or fuel lines, where corrosion resistance and secure connections are essential.

BENEFITS & APPLICATIONS BY END CONNECTION TYPE

Threaded End Stainless Steel Ball Valves

Benefits

- **Compact and Lightweight:** Threaded ends require no additional hardware (e.g., bolts), making them ideal for smaller, space-constrained systems.
- **Quick Installation:** Threaded connections allow for fast, tool-based installation without welding, reducing labor costs and setup time.
- **Cost-Effective:** Threaded valves are generally less expensive than flanged or welded options, suitable for low-to-moderate pressure systems.
- **Versatility in Small Systems:** Ideal for smaller pipe diameters (typically up to 2 inches) and systems requiring frequent valve replacement or adjustment.
- **Reliable Sealing:** When properly installed with thread sealant (e.g., PTFE tape), threaded ends provide a tight, leak-resistant seal.



Applications

- **Plumbing Systems:** Used in residential, commercial, or industrial plumbing for water, gas, or air lines due to ease of installation and corrosion resistance.
- **HVAC Systems:** Controls water or refrigerant flow in heating and cooling systems, where compact size and quick installation are advantageous.
- **Chemical Dosing Systems:** Employed in small-scale chemical processing or dosing systems for precise flow control of corrosive fluids.
- **Food and Beverage Processing:** Used in sanitary piping systems for liquids like juices or dairy, where stainless steel ensures hygiene and threaded ends simplify maintenance.
- **General Industrial Applications:** Applied in low-to-medium pressure systems for air, water, or non-critical fluids in manufacturing plants.

BENEFITS & APPLICATIONS BY END CONNECTION TYPE

Socket Weld Stainless Steel Ball Valves

Benefits

- **Permanent and Strong Connection:** Socket weld ends create a welded joint that is highly durable and leak-proof, ideal for high-pressure and high-temperature systems.
- **Smooth Flow Path:** The welded connection eliminates crevices, reducing turbulence and ensuring smooth flow, which is critical for sensitive applications.
- **Compact Design:** Socket weld valves are smaller than flanged valves, making them suitable for systems with space constraints.
- **High Integrity for Critical Systems:** The welded joint ensures no leakage, even under thermal expansion or vibration, enhancing safety in hazardous environments.
- **Corrosion Resistance at Joints:** When welded properly, the stainless steel joint resists corrosion, extending the valve's lifespan.



Applications

- **Oil and Gas Processing:** Used in high-pressure gas or oil lines in refineries and petrochemical plants, where permanent, leak-proof connections are required.
- **Steam Systems:** Applied in power plants or industrial steam lines due to their ability to handle high temperatures and pressures without leaking.
- **Chemical Plants:** Controls aggressive chemicals in systems requiring permanent connections to prevent leaks and ensure safety.
- **High-Pressure Hydraulic Systems:** Used in industrial machinery or hydraulic systems where strong, vibration-resistant connections are needed.
- **Pharmaceutical Manufacturing:** Employed in high-purity systems for sterile fluids, where the smooth, crevice-free welded joint ensures hygiene and prevents contamination.

COMPARISON AND SELECTION CONSIDERATIONS

Flanged End	Threaded End	Socket Weld
Best for large-diameter, high-pressure systems where maintenance access and secure connections are critical (e.g., oil and gas, power generation). Higher cost and space requirements.	Ideal for smaller, low-to-moderate pressure systems requiring quick installation and cost-effectiveness (e.g., plumbing, HVAC). Limited to smaller pipe sizes and lower pressures.	Suited for high-pressure, high-temperature, or critical systems where permanent, leak-proof connections are essential (e.g., steam, chemical plants). Requires skilled welding for installation.

KEY CONSIDERATIONS FOR PVF INSTALLATIONS



Material Compatibility

Stainless steel ball valves are chosen for their corrosion resistance, but the specific grade (e.g., 304, 316) should match the fluid and environmental conditions.

Pressure and Temperature Ratings

Ensure the valve's rating matches the system requirements, especially for flanged and socket weld valves in high-pressure applications.

Maintenance Needs

Flanged valves are easier to remove for maintenance, while socket weld valves are permanent. Threaded valves balance ease of installation with moderate maintenance access.

System Design

Consider pipe size, flow rate, and space constraints when selecting the end connection type.

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