



## STAINLESS STEEL BALL VALVES FAQs

### FOR WHOLESALE DISTRIBUTORS

**What stainless steel grades are available for these ball valves, and which is best for corrosive environments?**

Common grades include 304 and 316 stainless steel. 316 is preferred for highly corrosive environments (e.g., marine, chemical processing) due to its higher molybdenum content, which enhances corrosion resistance.

**What are the pressure and temperature ratings for threaded, socket weld, and flanged ball valves?**

Ratings vary by design and size. Threaded valves typically handle up to 1000 PSI (WOG), socket weld up to 3000 PSI, and flanged valves up to ANSI Class 150–600 (or higher). Always check manufacturer specs for temperature limits, which often reach up to 400°F for standard stainless steel.

**Are these valves available in full-port or reduced-port designs?**

Both options are available. Full-port valves minimize flow restriction, ideal for high-flow applications like oil and gas. Reduced-port valves are more cost-effective for less critical systems like plumbing.

**Do you offer valves compliant with industry standards (e.g., API, ANSI, ASME)?**

Yes, most stainless steel ball valves meet standards like API 608, ASME B16.34 (flanged), or MSS SP-110 (threaded/socket weld). Flanged valves often comply with ANSI B16.5 for flange dimensions.

**What is the lead time for bulk orders of threaded, socket weld, or flanged valves?**

Lead times depend on manufacturer and order size but typically range from 1–8 weeks. Stocked standard sizes (e.g., 1/2"–2" threaded) are often available immediately, while custom flanged valves may take longer.

**Are these valves suitable for sanitary applications like food and beverage or pharmaceuticals?**

Yes, stainless steel (especially 316) ball valves with threaded or flanged ends are used in sanitary applications due to their non-porous, easy-to-clean surfaces. Ensure valves meet FDA or 3A standards for hygiene.

## FOR ENGINEERS

**Which end connection type is best for high-pressure systems?**

Socket weld and flanged end ball valves are preferred for high-pressure systems (e.g., oil and gas, steam). Socket weld provides a permanent, leak-proof joint, while flanged allows easier maintenance. Threaded valves are better for lower-pressure systems (e.g., plumbing).

**How do I choose between threaded, socket weld, and flanged valves for a specific application?**

Threaded valves are ideal for small-diameter, low-to-moderate pressure systems (e.g., HVAC,

plumbing) due to easy installation. Socket weld is suited for high-pressure, permanent installations (e.g., chemical plants). Flanged valves are best for large-diameter, high-pressure systems requiring maintenance access (e.g., power generation).

**What is the flow coefficient (Cv) for these ball valves, and how does it impact system design?**

Cv varies by valve size and port type. Full-port valves have higher Cv (less flow restriction) than reduced-port. For example, a 1" full-port valve may have a Cv of 30–50, while reduced-port is lower. Check manufacturer data to ensure compatibility with system flow requirements.

**Are these valves suitable for throttling, or are they strictly for on/off control?**

Ball valves are primarily designed for on/off control due to their quarter-turn operation. Throttling can cause wear on the ball and seats, reducing lifespan. For throttling, consider globe or needle valves instead.

**Can these valves handle extreme temperatures or cryogenic applications?**

Standard stainless steel ball valves handle temperatures from -20°F to 400°F. For cryogenic applications (e.g., LNG), special designs with extended bonnets and PTFE seats are required. Verify manufacturer specs for extreme conditions.

**What are the maintenance requirements for these valves?**

Stainless steel ball valves require minimal maintenance due to their durability. Flanged valves are easiest to service (removable). Threaded valves may need thread sealant checks. Socket weld valves are permanent, requiring pipe cutting for replacement. Regular inspection of seats and seals is recommended.

## FOR CONTRACTORS

### **What tools or skills are required to install threaded, socket weld, or flanged ball valves?**

Threaded valves require wrenches and thread sealant (e.g., PTFE tape) for installation. Socket weld valves need certified welders and welding equipment for permanent joints. Flanged valves require bolting tools and proper flange alignment, following ANSI standards.

### **Are there specific torque requirements for flanged ball valve installation?**

Yes, flange bolts must be torqued according to ANSI B16.5 or manufacturer guidelines (e.g., 50–150 ft-lbs for Class 150 flanges, depending on size). Use a crisscross bolting pattern to ensure even pressure and avoid leaks.

### **Can threaded valves be used in systems with frequent vibrations?**

Threaded valves can loosen under high vibration. Use thread-locking compounds or consider socket weld or flanged valves for vibration-prone systems like industrial machinery or marine applications.

### **How do I ensure a leak-free installation for socket weld valves?**

Ensure proper pipe alignment, clean surfaces, and use certified welding procedures (e.g., ASME Section IX). Post-weld inspection (e.g., dye penetrant testing) ensures joint integrity.

### **Are these valves compatible with existing piping materials (e.g., carbon steel, PVC)?**

Stainless steel ball valves are compatible with

most piping materials, but avoid galvanic corrosion by matching materials (e.g., use stainless steel pipes or dielectric unions with dissimilar metals). Threaded valves work with NPT-compatible pipes; flanged valves need matching flange standards.

### **What are the typical failure modes for these valves, and how can they be prevented?**

Common failures include seat wear (from throttling), stem leaks, or corrosion (if improper grade is used). Prevent by selecting the correct valve type (e.g., full-port for high flow), using 316 stainless for corrosive fluids, and avoiding throttling. Regular inspection and proper installation mitigate risks.

### **Are Merit's ball valves applicable for steam service?**

No

### **Does Merit carry non-China ball valve?**

Our K series is manufactured in Vietnam and our V series is manufactured in Taiwan

### **What are the ball valve's PSI ratings?**

1. 1PC Ball Valve – K series 1000 WOG; V series 800 WOG
2. 2PC ball valve full port = 1000 WOG
3. 2PC ball valve standard port = 1500/2000 WOG (size dependent)
4. 3PC ball valve = 1000 WOG

### **Are your ball valves rated for Argon Gas?**

K series valves are not. V series valves are.

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