

# Ball Valve Specification

## 1.0 SCOPE

All requirements are for PVC, CPVC, PP & PVDF Type-21/21a ball valves and accessories.

## 2.0 MATERIALS

U-PVC – Conforming to ASTM D1784 Cell Classification 12454 A

CPVC – Conforming to ASTM D1784 Cell Classification 23567 A

Polypropylene – Conforming to ASTM D4101 Cell Classification PP0210B67272

PVDF – Conforming to ASTM D3222-91A Cell Classification Type II

FKM – Viton® Fluorocarbon Rubber

EPDM – Ethylene Propylene Diene Terpolymer Rubber

PTFE – Teflon® Polytetrafluoroethylene

## 3.0 TYPE-21/21a BALL VALVES

All Type-21/21a ball valves sized 1/2" – 6" shall be of True-Union design with 2-way blocking capability. PTFE seats shall have elastomeric backing cushions to provide smooth even stem torque and to compensate for wear. Valves shall feature molded ISO mounting top flange for actuation installation and Panel Mount feature on bottom of valve for securing in-line. The handle shall double as the spanner wrench for maintenance and carrier adjustment.

### 3.1 Operators

Type-21/21a 1/2" – 6" (Lever Type standard)

Lever Handle to be Asahi Standard valve handle red color.

### 3.2 Approved Manufacturer

Type-21/21a Ball Valves shall be provided by Asahi/America, Inc. of Lawrence, MA with no approved equals. Manufacturer must be ISO-9001 certified.

### 3.3 Working Temperature

Valves shall have a pressure rating of:

- 230 psi at 70° F sizes 1/2" – 3" in PVC, CPVC, PVDF (Socket, Thread or Butt)
- 150 psi at 70° F sizes 1/2" – 6" in PP, 4" - 6" in PVC, CPVC, PVDF
- 150 psi at 70° F sizes 1/2" – 6" in PVC, CPVC, PP, PVDF (Flanged)

## 4.0 ACCESSORIES

### 4.1 Stem Extensions

Stem extensions where required should be designed, built, and provided by the Asahi/America, Inc., and be 1 of 4 styles:

- Style BV-A two piece extension with outer housing 100% sealed either free standing or supported design
- Style BV-B single piece extension either free standing or supported design
- Style BV-P single piece Panel Mount Extension made of PVC.
  - Minimum length = 4"
  - Maximum length = 12"
  - Not available for 4" or 6" valves
- Style T21 Stem Extension Ends Kit. These are factory machined kits that permit the installer to fabricate PVC stem extensions using Schedule 40 or 80 PVC pipe. Max length 6 feet

### 4.2 Actuation

Actuation where required should be designed, built, and provided by Asahi/America, Inc., and be either pneumatic (Series 79P) or electric (Series 19, 94, or 92) type. All actuation accessories to be provided and installed by Asahi/America, Inc. in accordance with manufacturer's requirements.

### **4.3 Locking Devices**

Where required locking devices can be installed over the valve handle to prevent unauthorized operation of the valve.

### **4.4 Operating Nuts**

Where required, 2" square operating nuts can be installed in place of valve handle.  
Materials of construction – Anodized Aluminum.

### **4.5 Vented Ball for “Off-Gassing” Applications**

Where required in chemical services such as Sodium Hypochlorite where trapped media can off-gas causing a pressurization within the cavity of the ball when the valve is in the closed position, a 1/8" Vent Hole factory drilled and de-burred by the manufacturer can be added to eliminate the hazard of pressurization.

### **4.6 Optional Handle Colors**

Optional handle colors available in yellow, blue, or green.

### **4.7 Limit Switch**

#### **4.7.1 J-Switch**

J-Series manual ball valve limit switches (J-Switch®) are compatible with Asahi/America's Type-21/21a ball valves. The compact IP67 limit switch, designed for remote position indication of manual valves, includes two SPST mechanical switches, a terminal strip, a visual beacon, a NEMA 4X enclosure, factory mounting, and testing.

## **5.0 CERTIFICATIONS**

### **5.1 NSF-61**

PVC/EPDM, PVC/FKM, CPVC/EPDM and CPVC/FKM models shall have NSF-61 Certification for use in drinking water applications.

## **6.0 INSTALLATION PROCEDURES**

All valve joints shall be prepared using the preferred joining method for the valve material and installation type in accordance with all requirements put forth in the Type-21/21a Operation & Maintenance manual. All accessories should be installed in accordance with the manufacturers requirements as well as any facility requirements.