

## Engineering Specifications

### BRONZE BALL VALVES WITH STAINLESS STEEL TRIM

Model 2970.3

#### PART 1: GENERAL

##### 1.1 SUMMARY

A. General duty press end type bronze ball valve

##### 1.2 DEFINITIONS

A. The following are standard abbreviations for valves:

1. WOG: Water, Oil, Gas
2. EPDM: Ethylene-propylene-diene terpolymer rubber
3. PTFE: Polytetrafluoroethylene plastic

##### 1.3 REFERENCES

- A. ASME B16.18 Cast Copper Alloy Solder Joint Pressure Fittings
- B. ASME B16.22 Wrought Copper and Copper Alloy Solder Joint Pressure Fittings
- C. ASME B31.9 Building Services Piping
- D. ASTM B75 Standard Specification for Seamless Copper Tube
- E. ASTM B88 Standard Specification for Seamless Copper Tube
- F. IAPMO Uniform Mechanical Code
- G. IAPMO Uniform Plumbing Code
- H. ICC International Plumbing Code
- I. ICC International Mechanical Code
- J. NFPA 13 Standard for the Installation of Sprinkler Systems
- K. NFPA 13D Standard for the Installation of Sprinkler Systems in One and Two Family Dwellings and Mobile Homes
- L. NFPA 13R Standard for the Installation of Sprinkler Systems for Residential Occupancies Up to and Including Four Stories in Height
- M. NFPA 14 Standard for the Installation of Standpipe and Hose System
- N. NSF 61 Annex G Drinking Water System Components – Health Effects
- O. ASTM B 584 Standard Specification for Copper Alloy Sand Casting for General Applications
- P. ASME A112.4.14 Manually Operated Quarter Turn Shutoff Valves for Use in Plumbing Systems

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### 1.4 QUALITY ASSURANCE

- A. The installer shall be a qualified installer, licensed within the jurisdiction and familiar with the installation of copper tubing
- B. The installation of ball valves for hot and cold water distribution systems shall conform to the requirements of the ICC International Plumbing Code or IAPMO Uniform Plumbing Code. The installation of ball valves in sprinkler or standpipe systems shall conform to NFPA 13, 13D, 13 Rand 14. The installation of copper tubing in hydronic systems shall conform to the requirements of the ICC International Mechanical Code or the IAPMO Uniform Mechanical Code  
OR
- C. ASME Compliance: ASME B31.9 for building services piping valves
- D. Press end ball valves shall have the Smart Connect™ Feature (SC Feature). In ProPress 1/2" to 4" dimensions the Smart Connect Feature assures leakage of liquids and/or gases from inside the system past the sealing element of an unpressed connection. The function of this feature is to provide the installer quick and easy identification of connections which have not been pressed prior to putting the system into operation

### 1.5 DELIVERY, STORAGE AND HANDLING

- A. Prepare valves for shipping as follows:
  - 1. Protect internal parts against rust and corrosion
  - 2. Protect press ends
  - 3. Set ball valves open to minimize exposure of functional surfaces
- B. Use the following precautions during storage:
  - 1. Maintain valve end protection
  - 2. Store valves indoors and maintain at higher than ambient dew-point temperature. If outdoor storage is necessary, store valves off the ground in watertight enclosures.

### 1.6 WARRANTY

- A. The manufacturer shall warrant the valve to be free from defects in material or workmanship. The manufacturer shall warrant the functionality of valve for approved applications, installed according to manufacturer's installation instructions.
- B. The manufacturer of the tubing and fittings shall not be responsible for the improper use, handling or installation of the product

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### PART 2: PRODUCTS

#### 2.1 MANUFACTURES

- A. Ball Valve: Viega, 301 N. Main, 9th Floor, Wichita, KS  
Telephone: (316) 425-7400, Website: [www.viega.com](http://www.viega.com)

#### 2.2 MATERIAL

- A. Ball Valves (Plumbing): Ball valves 2 inch or less in diameter for plumbing systems shall conform to ASME A112.4.14
- B. Bronze valves shall be made with dezincification-resistant, zero lead materials. Bronze valves made with copper alloy (brass) shall meet the requirements of NSF 61 and California AB 1953.
- C. Two piece, Bronze Ball Valves: Bronze body with full port, 316 stainless steel ball, PTFE seats, 600WOG minimum rating and blow-out proof 316 stainless steel stem
- D. Bronze Ball Valves, General: MSS SP-110 and have bronze body complying with ASTM B584, except for Class 250 which shall comply with ASTM B 61
- E. Press Fitting: Copper press fitting shall conform to the material and sizing requirements of ASME B16.18 or ASME B16.22. sealing elements for copper press fittings shall be EPDM
- F. Ball valves shall be equipped with a lockable metal handle
- G. Ball Valve Press end will be equipped with a sealing element made of EPDM

#### 2.3 BALL VALVES, GENERAL

- A. Ball Valves shall be rated 600 WOG. Valve shall be the size as identified on the plans

#### 2.4 SOURCE QUALITY CONTROL

- A. All ball valves in contact with drinking water shall be listed by a third party agency to NSF 61 Annex G

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### PART 3: EXECUTION

#### 3.1 EXAMINATION

- A. Examine piping system for compliance with requirements for installation tolerances, imperfections in pipe and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected
- B. The contractor shall examine valve interior for cleanliness, freedom from foreign matter and corrosion. Remove special packing materials, such as blocks, used to prevent disc movement during shipping and handling
- C. Operate valves in positions from fully opened to fully closed. Examine guides and seats made accessible by such operations
- D. Examine threads on valve

#### 3.2 PREPERATION

- A. Press connection fitting should be inspected to assure sealing element is in place
- B. Pipes shall be properly reamed and de-burred prior to insertion into press connection type valve to prevent possible damage to sealing element

#### 3.3 INSTALLATION

- A. Install valves with unions or flanges at each piece of equipment arranged to allow service, maintenance and equipment removal without system shutdown
- B. Locate valves for easy access
- C. Install valves in position to allow full stem movement
- D. Ball valves that are remotely located shall have a metal tag indicating the section of pipe that it isolates
- E. Press Connections shall be made according to manufacturer's installation instructions
- F. Press Connections shall be made using tooling and equipment as specified by manufacturer

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### 3.4 APPLICATIONS

- A. Domestic Water Systems: 2" and smaller, two-piece construction, 600 WOG rating, copper alloy
- B. Chilled Water Systems: 2" and smaller, two-piece construction, 600 WOG rating, copper alloy
- C. Condenser Water Systems: 2" and smaller, two-piece construction, 600 WOG rating, copper alloy
- D. Compressed Air Systems: 2" and smaller, two-piece construction, 600 WOG rating, copper alloy
- E. Heating Water Systems: 2" and smaller, two-piece construction, 600 WOG rating, copper alloy
- F. Low-Pressure Steam Systems: 2" and smaller, two-piece construction, 600 WOG rating, copper alloy