

SECTION 230523.11 - GLOBE VALVES FOR HVAC PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Bronze angle valves.
2. Bronze globe valves.
3. Iron globe valves.
4. Chainwheels.

1.2 DEFINITIONS

A. CWP: Cold working pressure.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of valve.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Prepare valves for shipping as follows:

1. Protect internal parts against rust and corrosion.
2. Protect threads, flange faces, grooves, and weld ends.
3. Set angle and globe valves closed to prevent rattling.

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.

C. Use sling to handle large valves; rig sling to avoid damage to exposed parts. Do not use handwheels or stems as lifting or rigging points.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR VALVES

A. Source Limitations for Valves: Obtain each type of valve from single source from single manufacturer.

B. ASME Compliance:

1. ASME B1.20.1 for threads for threaded-end valves.
2. ASME B16.1 for flanges on iron valves.
3. ASME B16.10 and ASME B16.34 for ferrous valve dimensions and design criteria.
4. ASME B16.18 for solder joint.
5. ASME B31.1 for power piping valves.
6. ASME B31.9 for building services piping valves.

C. Refer to HVAC valve schedule articles for applications of valves.

D. Valve Pressure and Temperature Ratings: Not less than indicated and as required for system pressures and temperatures.

E. Valve Sizes: Same as upstream piping unless otherwise indicated.

F. Valves in Insulated Piping: With 2-inch stem extensions.

2.2 BRONZE ANGLE VALVES

A. Bronze Angle Valves, Class 125:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. American Valve, Inc.
 - b. Hammond Valve
 - c. Milwaukee Valve Company.
 - d. NIBCO, Inc.
2. Description:
 - a. Standard: MSS SP-80, Type 1.
 - b. CWP Rating: 200 psig.
 - c. Body Material: ASTM B 62, bronze with integral seat and screw-in bonnet.
 - d. Ends: Threaded.
 - e. Stem and Disc: Bronze.
 - f. Packing: Asbestos free.
 - g. Handwheel: Malleable iron, bronze, or aluminum.

2.3 BRONZE GLOBE VALVES

A. Bronze Globe Valves, Class 125:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. Apollo Valves
- b. Hammond Valve
- c. Milwaukee Valve Company.
- d. NIBCO, Inc.

2. Description:

- a. Standard: MSS SP-80, Type 1.
- b. CWP Rating: 200 psig.
- c. Body Material: ASTM B 62, bronze with integral seat and screw-in bonnet.
- d. Ends: Threaded or solder joint.
- e. Stem and Disc: Bronze.
- f. Packing: Asbestos free.
- g. Handwheel: Malleable iron, bronze, or aluminum.

2.4 IRON GLOBE VALVES

A. Iron Globe Valves, Class 125:

B. Bronze Globe Valves, Class 125:

- 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. Apollo Valves
- b. Hammond Valve
- c. Milwaukee Valve Company.
- d. NIBCO, Inc.

2. Description:

- a. Standard: MSS SP-85, Type I.
- b. CWP Rating: 200 psig.
- c. Body Material: ASTM A 126, gray iron with bolted bonnet.
- d. Ends: Flanged.
- e. Trim: Bronze.
- f. Packing and Gasket: Asbestos free.
- g. Operator: Handwheel or chainwheel.

2.5 CHAINWHEELS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- 1. Roto Hammer Industries
- 2. Trumbull Industries

- B. Description: Valve actuation assembly with sprocket rim, chain guides, chain, and attachment bra for mounting chainwheels directly to handwheels.
 - 1. Sprocket Rim with Chain Guides: Ductile iron, of type and size required for valve.
 - 2. Chain: Hot-dip-galvanized steel of size required to fit sprocket rim.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. 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.
- B. Operate valves in positions from fully open to fully closed. Examine guides and seats made accessible by such operations.
- C. Examine threads on valve and mating pipe for form and cleanliness.
- D. Examine mating flange faces for conditions that might cause leakage. Check bolting for proper size, length, and material. Verify that gasket is of proper size, that its material composition is suitable for service, and that it is free from defects and damage.
- E. Do not attempt to repair defective valves; replace with new valves.

3.2 VALVE 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 and provide separate support where necessary.
- C. Install valves in horizontal piping with stem at or above center of pipe.
- D. Install valves in position to allow full stem movement.
- E. Install chainwheels on operators for globe valves NPS 4 and larger and more than 96 inches above floor. Extend chains to 60 inches above finished floor.
- F. Install valve tags. Comply with requirements in Section 230553 "Identification for HVAC Piping and Equipment" for valve tags and schedules.

3.3 ADJUSTING

- A. Adjust or replace valve packing after piping systems have been tested and put into service but before final adjusting and balancing. Replace valves if persistent leaking occurs.

3.4 GENERAL REQUIREMENTS FOR VALVE APPLICATIONS

- A. If valve applications are not indicated, use the following:
 - 1. Throttling Service except Steam: Globe valves.
 - 2. Throttling Service, Steam: Globe valves.
- B. If valves with specified CWP ratings are unavailable, the same types of valves with higher CWP ratings may be substituted.
- C. Select valves with the following end connections:
 - 1. For Copper Tubing, NPS 2 and Smaller: Threaded ends except where solder-joint valve-end option is indicated in valve schedules.
 - 2. For Copper Tubing, NPS 2-1/2 to NPS 4: Flanged ends except where threaded valve-end option is indicated in valve schedules.
 - 3. For Copper Tubing, NPS 5 and Larger: Flanged ends.
 - 4. For Steel Piping, NPS 2 and Smaller: Threaded ends.
 - 5. For Steel Piping, NPS 2-1/2 to NPS 4: Flanged ends except where threaded valve-end option is indicated in valve schedules.
 - 6. For Steel Piping, NPS 5 and Larger: Flanged ends.

3.5 CHILLED-WATER VALVE SCHEDULE

- A. Pipe NPS 2 and Smaller: Bronze angle or globe valves, Class 125, bronze disc, with soldered ends.
- B. Pipe NPS 2-1/2 and Larger: Iron globe valves, Class 125, with flanged ends.

3.6 HEATING-WATER VALVE SCHEDULE

- A. Pipe NPS 2 and Smaller: Bronze angle or globe valves, Class 125, with bronze disc, and soldered ends.
- B. Pipe NPS 2-1/2 and Larger: Iron globe valves, Class 125, with flanged ends.

3.7 MEDIUM-PRESSURE STEAM VALVE SCHEDULE (MORE THAN 15 PSIG)

- A. Pipe NPS 2 and Smaller: Bronze angle or globe valves, Class 125, with bronze disc and soldered ends.
- B. Pipe Sizes NPS 2-1/2 and Larger: Iron globe valves, Class 125.

3.8 STEAM-CONDENSATE VALVE SCHEDULE

- A. Pipe NPS 2 and Smaller: Bronze angle or globe valves, Class 125, with bronze disc, and with soldered ends.

B. Pipe NPS 2-1/2 and Larger: Iron globe valves, Class 125.

END OF SECTION 230523.11