

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Gate valves.
2. Ball valves.
3. Check valves.

B. Related Sections:

1. Section 22 05 03 - Pipes and Tubes for Plumbing Piping and Equipment: Product and installation requirements for piping materials applying to various system types.
2. Section 22 05 29 - Hangers and Supports for Plumbing Piping and Equipment: Product and installation requirements for pipe hangers and supports.
3. Section 22 07 00 - Plumbing Insulation: Product and installation requirements for insulation for valves.
4. Section 22 11 00 - Facility Water Distribution: Product and installation requirements for piping, piping specialties and equipment used in domestic water systems.
5. Section 22 13 00 - Facility Sanitary Sewerage: Product and installation requirements for piping, piping specialties and equipment used in sanitary waste and vent systems.
6. Section 22 61 13 - Compressed-Air Piping for Laboratory Facilities: Product and installation requirements for valves used in compressed air systems.
7. Section 22 62 13 - Vacuum Piping for Laboratory Facilities: Product and installation requirements for valves used in vacuum systems.

1.02 REFERENCES

A. Manufacturers Standardization Society of the Valve and Fittings Industry:

1. MSS SP 70 - Cast Iron Gate Valves, Flanged and Threaded Ends.
2. MSS SP 71 - Cast Iron Swing Check Valves, Flanged and Threaded Ends.
3. MSS SP 80 - Bronze Gate and Check Valves.
4. MSS SP 110 - Ball Valves Threaded, Socket-Welding and Solder Joint.

1.03 SUBMITTALS

- A. Division 01 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit manufacturers catalog information with valve data and ratings for each service.
- C. Manufacturer's Installation Instructions: Submit hanging and support methods, joining procedures.
- D. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.04 CLOSEOUT SUBMITTALS

- A. Division 01 - Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents: Record actual locations of valves.
- C. Operation and Maintenance Data: Submit installation instructions, spare parts lists, exploded assembly views.

1.05 QUALITY ASSURANCE

- A. For drinking water service, provide valves complying with NSF 61.
- B. Perform Work in accordance with NSPC.
- C. Maintain one (1) copy of each document on site.

1.06 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.
- B. Installer: Company specializing in performing work of this section with minimum 5 years documented experience.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Division 01 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Accept valves on site in shipping containers with labeling in place. Inspect for damage.
- C. Provide temporary protective coating on cast iron and steel valves.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Division 01 - Product Requirements: Environmental conditions affecting products on site.
- B. Do not install valves underground when bedding is wet or frozen.

1.09 WARRANTY

- A. Division 01 - Execution and Closeout Requirements: Requirements for warranties.
- B. Furnish five-year manufacturer warranty for valves excluding packing.

1.10 EXTRA MATERIALS

- A. Division 01 - Execution and Closeout Requirements: Requirements for extra materials.
- B. Furnish two packing kits for each size valve.

PART 2 - PRODUCTS

2.01 GATE VALVES

- A. Manufacturers: Subject to requirements of the specification, provide the following manufacturer's products by one of the following or approved equal:
 - 1. Crane Valve, North America.
 - 2. Hammond Valve.
 - 3. Milwaukee Valve Company.
 - 4. NIBCO, Inc.
 - 5. Stockham Valves & Fittings.
- B. Furnish materials in accordance NSPC standards.
- C. 2 inches (50 mm) and Smaller: MSS SP 80, Class 150, bronze body, bronze trim, threaded or union bonnet, non-rising stem, hand-wheel, inside screw, solid or split wedge disc, alloy seat rings, solder or threaded ends.
- D. 2-1/2 inches (65 mm) and Larger: MSS SP 70, Class 125 cast iron body, bronze trim, bolted bonnet, non-rising stem, hand-wheel, solid wedge disc with bronze seat rings, flanged ends. Furnish chain-wheel operators for valves 6 inches (150 mm) and larger mounted over 8 feet (2400 mm) above floor.

2.02 BALL VALVES

- A. Manufacturers: Subject to requirements of the specification, provide the following manufacturer's products by one of the following or approved equal:
 - 1. Crane Valve, North America.
 - 2. Hammond Valve.
 - 3. Milwaukee Valve Company.
 - 4. NIBCO, Inc.
 - 5. Stockham Valves & Fittings.
- B. Furnish materials in accordance with NSPC.
- C. 2 inches (50 mm) and Smaller: MSS SP 110, 600 psi (4140 kPa) WOG two-piece bronze body, chrome plated brass ball, full port, teflon seats, blow-out proof stem, solder or threaded ends lever handle with balancing stops.

2.03 CHECK VALVES

- A. Horizontal Swing Check Valves:
 - 1. Manufacturers: Subject to requirements of the specification, provide the following manufacturer's products by one of the following or approved equal:
 - a. Crane Valve, North America.
 - b. Hammond Valve.
 - c. Milwaukee Valve Company.
 - d. NIBCO, Inc.
 - e. Stockham Valves & Fittings.
 - 2. Furnish materials in accordance with IBC-NJ.
 - 3. 2 inches (50 mm) and Smaller: MSS SP 80, Class 150 bronze body and cap, bronze seat, Buna- disc, solder or threaded ends.
 - 4. 2-1/2 inches (65 mm) and Larger: MSS SP 71, Class 125 cast iron body, bolted cap, bronze or cast iron disc flanged ends.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Division 01 - Administrative Requirements: Verification of existing conditions before starting work.

- B. Verify piping system is ready for valve installation.

3.02 INSTALLATION

- A. Install valves with stems upright or horizontal, not inverted.
- B. Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.
- C. Install 3/4 inch (20 mm) ball valves with cap for drains at main shut-off valves, low points of piping, bases of vertical risers, and at equipment.
- D. Install valves with clearance for installation of insulation and allowing access.
- E. Provide access where valves and fittings are not accessible. Coordinate size and location of access doors with Division 08.
- F. Refer to Section 22 05 03 for piping materials applying to various system types.
- G. Refer to Section 22 05 29 for pipe hangers.
- H. Refer to Section 22 07 00 for insulation requirements for valves.
- I. Install Work in accordance with NSPC.

3.03 VALVE APPLICATIONS

- A. All shut-off valves 2" and smaller shall be ball valves.
- B. Install shutoff and drain valves at locations indicated on Drawings in accordance with this Section.
- C. Install ball or gate valves for shut-off and to isolate equipment, part of systems, or vertical risers.
- D. Install ball valves for throttling, bypass, or manual flow control services (pump service).
- E. Install ball valves in domestic water systems for shut-off service (pump service).
- F. Install ball valves in domestic water systems for throttling service.
- G. Install gate valves in sanitary systems for shut-off service.

END OF SECTION