

SECTION 336023 – VALVES FOR UTILITY DISTRIBUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to this section.

1.2 SUMMARY

- A. Provide all labor, materials, and equipment as necessary to complete all work as indicated on the Drawings and as specified herein.
- B. This section includes the furnishing and installation of general duty valves and cocks.
- C. Related sections include the following:
 - 1. Division 33 Section "Utility Distribution General Requirements."
 - 2. Division 33 Section "Piping for Utility Distribution."
 - 3. Division 33 Section "Piping Specialties for Steam Utility Distribution."

1.3 REFERENCES

- A. ANSI/ASME B31.1 - Power Piping.
- B. ANSI/ASME B31.9 - Building Services Piping.
- C. ASTM B62 - Specification for Composite Bronze or Ounce Metal Castings.
- D. ASTM A126 - Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
- E. MSS SP-67 - Butterfly Valves.
- F. MSS SP-80 - Bronze Gate, Globes, Angle and Check Valves.

1.4 SUBMITTALS

- A. Shop Drawings for a schedule of valves including type of service, sizes, and pressure/temperature ratings.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. Valves shall be suitable for temperature and pressure involved. Unless noted otherwise, valves shall be rated at not less than the following working pressures:
 - 1. High pressure (above 15 psi) steam and condensate systems: 150 psi.

- B. Accessory piping valves on steam lines shall be forged steel gate valves. Valves designated as welded shall be the butt or socket type, and those that are designated as screwed shall be threaded. Back welding of threaded steel valves will not be permitted. Valves indicated as threaded on one side and welded on the other, shall be welded steel valves with a threaded nipple welded to the side designated as threaded.
- C. Acceptable Manufacturers:
 - 1. Crane, Velan, Bonney Forge, Vogt, Edwards, Walworth, Powell, Jenkins, Stockham, or approved equal.
 - 2. Butterfly Valves: Zwick or Adams.

2.2 VALVE PACKING

- A. Valve stems and other packed joints shall be tight under conditions of actual operation. Packing shall be John Crane, Garlock, or other approved metallic packing.

2.3 GATE VALVES

- A. Gate valves, 2 inches in size and smaller Class 800 forged steel, shall be bolted bonnet, rising stem, solid wedge, socket or butt welded, ASTM A105 carbon steel to match Schedule 40 and 80 pipe end. Stems shall be 13% chromed stainless with steel handwheel. Equal to Vogt SW13111.
- B. Gate valves, 2-inch in size and smaller Class 150, shall be rising stem, union bonnet, solid wedge, threaded or solder ends, and conform to MSS SP-80. Body, bonnet and wedge shall be of bronze ASTM B62. Stems shall be of silicone bronze ASTM B371, non-asbestos packing, and malleable iron handwheel. Valves shall be equal to Crane No. 431 UB, or Milwaukee 1151 or 1169. For use only on condensate discharge downstream of the trap.
- C. Gate valves, 2-1/2 inches in size and larger Class 150, shall be manufactured in accordance with API600, OS&Y, bolted bonnet, welded ends, carbon steel body, solid wedge flexible disc, Type XU trimmed, and non-asbestos packing and gaskets. Body and bonnet shall conform to ASTM A216. Valves shall be equal to Crane No. 47-1/2.
- D. All gate valves 20 inches or larger shall be provided with manual operators with bevel gear actuator with 4.0:1 reduction gearing. Minimum output torque shall be 2,000 ft/lbs.

2.4 CHECK VALVES

- A. Swing check valves for sump pump application, 2 inches in size and smaller shall be Class 300, Y-pattern swing check, renewable disc, and threaded ends. Valves shall be equal to Stockam No. B375.
- B. Spring loaded check valves for steam/condensate application, 2-inch in size and smaller, shall be all stainless steel in-line wafer check with spring assist. Valve shall be equal to "Durabla" SCV check valve.

2.5 BUTTERFLY VALVES

- A. Butterfly valves for steam utility distribution systems, 2-1/2 inches in size and larger, shall be triple offset, metal to metal, zero leakage, butt-weld type, ANSI Class 150, suitable for continuous duty in 150 psig steam at 500 degree F.
- B. Materials:
 - 1. Carbon Steel body, butt-weld style
 - 2. Stainless steel shaft with stainless steel bearings.
 - 3. Carbon steel disc.
 - 4. Metal to metal seat with graphite seal and/or fully bi-directional on dead-end service.
- C. Provide manual gear operator with high ratio for slow opening and handwheel.
- D. Valves for steam applications shall be Zwick Tri-Con Series S or Adams MAK.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Shut-off Valves: Install at service connections and branches for isolation and repair, and as indicated on the Drawings. Valves shall be easily accessible from floor.
- B. Steam valves 10 inches or larger shall be by-passed. Condensate valves need no bypass.
- C. Bypass shall be installed in the field with forged steel gate valves. Bypass pipe and valve shall be 1-inch on steam valves 10 inches through 18 inches. Bypass and valve shall be 2-inch on steam valves 20 inches or larger.
- D. Bleeders shall be installed on both sides of the main line valves on both the steam and condensate lines unless otherwise indicated on the Drawings. Bleeders shall be 1-inch in size. Valves on bleeders shall be placed so that they are easily accessible. An elbow and 2 nipples shall be placed on the valve outlet so as to direct the water and steam away from the tunnel walkway. Valves shall always be before any elbow.
- E. All valves shall have their bonnets horizontal or above toward vertical.

END OF SECTION 336023