For use in the Denver Water Service Area

Material Specification – 8

TAPPING VALVES – MECHANICAL JOINT TYPE

1. GENERAL

Tapping valves shall be designed and manufactured in accordance with AWWA C509 or AWWA C515, as applicable, with the following additional requirements or exceptions.

2. SERVICE

Valves shall be suitable for frequent operation and for long periods of inactivity. Valves shall operate with flows in either direction; the operating pressure for all sizes shall be 200 psi. Components shall be suitable for exposure to chloraminated water.

3. SIZES

This Specification covers 150 pound class tapping valves – mechanical joint type, in 4-inch through 12-inch nominal diameters.

4. VALVE DESCRIPTION

Valves shall be iron body, resilient seated gate valves with non-rising stems. If the resilient seats are bonded to the gates, the gates shall be completely encapsulated with the material except for guide tabs or slots. Valves installed in the recycled water system shall have EPDM seats.

5. INSTALLATION

Valves shall be installed with the stem positioned vertically in buried horizontal water lines without gearing, bypasses, rollers, or tracks. The valve bonnet shall be installed below frost line.

6. VALVE STEMS

Valve stems shall be made of bronze in accordance with ASTM B 763, Copper Alloy No. C99500; stainless steel in accordance with ASTM A 276, Type 304, Type 316, or AISI 420; or copper alloy in accordance with ASTM B 98, Copper Alloy No. C66100/H02.

Valves shall be furnished with 2-inch square wrench nuts. The stem seal shall consist of two O-rings. Valves shall open clockwise.

7. BOLTING MATERIAL

The bonnet, gland bolts, and nuts shall be in accordance with ASTM F 593, Type 304 stainless steel or electro-plated with zinc or cadmium. The hot-dip galvanized process is not acceptable.

8. END CONNECTIONS

A. Flanges shall be sized and drilled in accordance with ANSI B16.1, Class 125. Flanges shall be machined to a flat surface with a serrated finish in accordance with AWWA C207.

B. Mechanical joint components shall be in accordance with AWWA C111 with tee-head bolts and hexagon nuts fabricated from a high-strength, low alloy steel known in the industry as Cor-Ten, Usalloy, or Durabolt.

Accessories for the mechanical joint shall consist of the gasket, gland, and fasteners and shall be furnished and packaged separately from valves. Each package shall be labeled in a manner that provides for proper identification, and the number of units listed per package or bundle.

9. SEAT RING SIZE

The body of the valve and the seat opening shall be sized large enough to accommodate the following sizes of shell cutters:

Tapping Valve Nominal Diameter (Inch)	Shell Cutter Diameter (Inch)
4	3 7/8 ±1/32
6	5 13/16 ±1/32
8	7 7/8 ±1/32
10	9 3/4 ±1/32
12	11 7/8 ±1/32

10. TESTING

Each valve, after shop assembly, shall be operated and hydrostatic tested in accordance with AWWA C509 or AWWA C515.

11. COATINGS

Ferrous surfaces, except machined or bearing surfaces, shall be prepared in accordance with SSPC SP10. These surfaces shall then be coated with liquid epoxy in two or more uniform coats or with fusion-bonded epoxy to a minimum DFT of 10-mils in accordance with AWWA C550. Machined flange faces shall be shop-coated with a rust-preventive compound; they shall not be painted or coated with the same coating as the body.

12. QUALITY CONTROL

The Manufacturer shall submit a written statement that the inspection and all specified tests have been completed and that results comply with the requirements of these Standards. Components in contact with potable water shall be certified to comply with NSF/ANSI 61, and a copy of the NSF/ANSI 61 certification shall be provided to Denver Water, if requested.

13. APPROVED MANUFACTURERS

American AVK
American Flow Control/American Cast Iron Pipe Company, Series 2500 RW
Clow
Kennedy
Mueller Company
U. S. Pipe and Foundry Company

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