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## SECTION 15100 ECCENTRIC PLUG VALVES

### PART 1. GENERAL

#### 1.01 SECTION INCLUDES

- A. Eccentric Plug valves, 4-20" (100-500mm), of rectangular port construction with resilient lined body and resilient faced cylindrical plugs eccentrically offset from the seat, for the purpose of providing isolation or throttling control as indicated.

#### 1.02 REFERENCES

- A. ASTM A126 Class B "Gray Iron Castings for Valves, Flanges and Pipe Fittings"
- B. ASME B16.1 "Pipe Flanges and Flanged Fittings"
- C. AWWA C517 "Resilient-Seated Cast-Iron Eccentric Plug Valves"
- D. AWWA C111 "Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings"
- E. NSF/ANSI 61 "Drinking Water System Components - Health Effects"
- F. NSF/ANSI 372 "Drinking Water System Components - Lead Content"

#### 1.03 SUBMITTALS

- A. Submit detailed product data and descriptive literature to include dimensions and materials of construction.
- B. Provide shop drawings to show installation arrangement of major component assemblies.

#### 1.04 QUALITY ASSURANCE

- A. Supplier shall have been manufacturing rubber lined eccentric plug valves for a period of at least ten years. At the engineer's request, supplier shall provide a list of installations involving equipment of similar size and application.
- B. Valves and Actuators shall be warranted by the manufacturer for defects in materials and workmanship for a period of two years (24 months) from date of shipment.
- C. Each valve and actuator shall be assembled, adjusted and tested as a unit by the valve manufacturer.

### PART 2. PRODUCTS

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. DeZURIK
  - 1. DeZURIK PEC-CIS Eccentric Plug Valve.

## **2.02 ECCENTRIC PLUG VALVES**

- A. Plugs shall be solid one piece, Cast Iron ASTM A126 Class B or Ductile Iron ASTM 536 Grade 65-45-12. The plug shall have a cylindrical seating surface eccentrically offset from the center of the shaft. Plug shall not contact the seat until at least 90% closed. Resilient plug facing shall be Chloroprene (CR). Spherical shaped plugs are not acceptable.
- B. Bodies and covers shall be Cast Iron ASTM A126 Class B. All interior surfaces shall be covered with 1/8" thick Chloroprene (CR), including body, plug and cover. Rubber shall be vulcanized to assure permanent bonding to the valve.
- C. Ports shall be rectangular. Round ports are not acceptable. Bearings shall be sleeve type and made of sintered, oil impregnated permanently lubricated type 316 stainless steel for sizes 4-18" (100-450mm) and ASTM A743 Grade CF8M for sizes 20" (500mm).
- D. Seats shall be 1/8" thick welded overlay of not less than 95% pure nickel. Seat shall be at least 1/2" wide, 1/8" thick through entire width and raised. The raised surface shall be completely covered with nickel to ensure that the resilient plug face contacts only the nickel seat.
- E. Adjustable packing shall be Acrylonitrile-Butadiene (NBR) multiple V-ring type, with a packing gland follower. Packing gland shall permit inspection, adjustment or complete replacement of packing without disturbing any part of the valve or actuator assembly, except the gland follower. Non-adjustable packing or packing requiring actuator removal to replace the packing, is not acceptable.
- F. Pressure ratings shall be 175 psi (1210 kPa) on valve sizes through 12" (300mm) and 150 psi (1035 kPa) for 14" (350mm) and larger. Every valve shall be given a certified hydrostatic shell test and seat test, with test reports being available upon request.
- G. All valves shall be installed with worm gear actuators. All gearing shall be enclosed in a cast iron housing, with outboard seals to protect the bearings and other internal components. The actuator shaft and gear quadrant shall be supported on permanently lubricated bronze bearings.
- H. Buried actuators shall be 90% grease filled. Input shaft and fasteners shall be stainless steel. Actuator mounting brackets shall be totally enclosed. Other actuators to be installed according to drawings or customer specifications.
- I. End connections shall meet or exceed the latest revisions of AWWA C517 and other applicable standards. End Connections shall be Flanged drilled per ASME B16.1 and/or Mechanical Joint per AWWA C111.
- J. When specified, valves shall be NSF/ANSI 372 certified lead-free and NSF/ANSI 61 certified for drinking water.

## **3.2 INSTALLATION**

- A. In applications of liquids with suspended solids:
  - 1. For valves installed in a vertical pipeline, or where the possibility of overhead drain-back exists, install the valve with the seat at the top to prevent drain-back solids from settling into the valve body.
  - 2. For valves installed in a horizontal pipeline, install the valve so the plug rotates up when opened. Install the valve with the higher pressure against the seat end of the valve.
  - 3. Proper installation of PEC Eccentric Valves with rubber lining and rubber faced flanges are without gaskets. The rubber facing on the valve flanges is an integral flange seal.