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## **SECTION 40\_XX\_XX**

### **SINGLE BODY COMBINATION AIR VALVE FOR CLEAN SERVICE**

#### **PART 1 - GENERAL**

##### **1.01 SUMMARY**

- A. Section Includes:
  - 1. Single body combination air valves for clean service
  
- B. Related Sections:
  - 1. (provided by the engineer)
  - 2. (provided by the engineer)
  - 3. (provided by the engineer)

##### **1.02 REFERENCES**

- A. ASME B16.42 "Ductile Iron Pipe Flanges and Flanged Fittings"
- B. AWWA C512 "Air Release, Air/Vacuum and Combination Air Valves for Waterworks Service"

##### **1.03 SUBMITTALS**

- A. (provided by the engineer)

##### **1.04 QUALITY ASSURANCE**

- A. Valves shall be warranted by the manufacturer for defects in materials and workmanship for a period of two years (24 months) from date of shipment.

#### **PART 2 - PRODUCTS**

##### **2.01 GENERAL**

- A. (provided by the engineer)

##### **2.02 AIR RELEASE VALVES FOR CLEAN SERVICE**

- A. Manufacturers: APCO AVC or pre-approved equal
- B. Design:
  - 1. Combination air valve shall have a single body with a double orifice
  - 2. General:
    - a. Large orifice shall allow large volumes of air to escape when filling a pipeline and shall close as liquid enters the valve. When the valve is closed and pressurized, the small orifice will open to allow small pockets of air to escape automatically and independently of the large orifice.
    - b. Large orifice shall be sized to allow large volumes of air to enter during pipeline drainage to break the vacuum
    - c. Baffle shall be designed to protect the float from direct contact of the rushing air and water to prevent the float from closing prematurely.
    - d. Seat shall be fastened into the valve cover without distortion and provide drip tight shut off. Seat shall be field replaceable without special tools.
    - e. Float shall be center guided through bushings for positive shut off

- C. Materials:
  - 1. Body: Ductile Iron ASTM A536 Gr 65-45-12
  - 2. Cover: Ductile Iron ASTM A536 Gr 65-45-12
  - 3. Plug: 316 Stainless Steel ASTM A213
  - 4. Seat & Needle: Acrylonitrile-Butadiene (NBR), Terpolymer of Ethylene, Propylene and A Diene (EPDM) or Fluoro Rubber (FKM)
  - 5. Float: 316 Stainless Steel ASTM A213
  - 6. Hood: Steel, Wrought, 1010 ASTM A108
- D. Specifications for optional accessories:
  - 1. DAT: A double acting throttling device fitted on the discharge orifice to provide both throttling air out and full flow air in
  - 2. MRC: A mushroom cap installed in the threaded outlet for discharge protection
- E. Testing:
  - 1. Each valve shall be shop tested as a complete assembly in accordance with AWWA C512.
  - 2. Certified test reports shall be available upon request.

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION**

- A. Install valves as specified in section (filled in by the engineer) and the manufacturer's instructions.
- B. (verbiage by engineer instructing how discharge piping should be installed)

### **3.01 COMMISSIONING**

- A. Field testing (verbiage by engineer)