SECTION 23 05 23

GENERAL DUTY VALVES FOR HVAC

PART 1 GENERAL

1.1 OPERATION AND MAINTENANCE DATA
   A. Include documentation of inspections and tests performed, including logs, curves, and certificates.
   B. Documentation shall note replacement of equipment or components that failed during testing.

PART 2 PRODUCTS

2.1 MANUFACTURERS AND MODELS
   A. Strainers:
      1. “Y” Pattern cast iron, ductile iron, or bronze body.
      2. Fusion epoxy or approved enamel coated cast iron – internal and external.
      3. Blow off connection: 1” for sizes 2-1/2” & 3”; 1-1/2” for 4” size; 2” sizes 6” - 10”
      4. Screen:
         a) Sizes 2” – 3”: Type 302/304 stainless steel with 1/16” perforation.
         b) Sizes 4” - 10”: Type 302/304 stainless steel with 1/8” perforation.
         c) Blow off connection shall have removable plug.
         d) 300 psi W.P.
   B. Ball Valves:
      1. Straight pattern.
      2. Bronze body.
      3. Stainless or chrome plated ball.
      4. 300 psi W.P. @ 180°F water temperature.
   C. Flanges Cast Iron, Ductile, and Bronze:
      1. 250 psi min. W.P.
   D. Drinking water components shall meet NSF/ANSI Standard 61 or NSF/ANSI Standard 372.
   E. Ball Valves – up to 2”:
      1. Bronze body, tunnel balls.
      2. Acceptable manufacturers:
         a) Apollo
         b) Kitz
         c) Hammond
         d) Jamesbury
         e) Jenkins
         f) Milwaukee
         g) Nibco
         h) Watts
   F. Butterfly valve acceptable manufacturers – 2-1/2” and above:
      1. Crane
2. Nibco
3. Posi-Seal
4. Victaulic
5. 300 psi CWP (2065 kPa) suitable for bidirectional and dead-end service at full rated pressure. Grooved end black enamel coated ductile iron body conforming to ASTM A536, [coated ductile iron] [stainless steel] [aluminum bronze] disc with blowout proof 416 stainless steel stem. Disc offset from the stem centerline to allow full 360 degree circumferential seating, with [EPDM] [Lubricated Nitrile] seat (pressure responsive in sizes through 12". Victaulic Vic®-300 MasterSeal™ and AGS-Vic300.

G. U.L., F.M. Approved or Listed Valve approved manufacturers:
   1. Grinnell
   2. Kennedy
   3. Keystone
   4. Mission
   5. Mueller
   6. Nibco
   7. Victaulic

H. Bronze pressure-rated valve approved manufacturers:
   1. Crane
   2. Hammond
   3. Lunkenheimer
   4. Milwaukee
   5. Nibco
   6. Stockham
   7. Walworth

I. Iron body pressure-rated valve approved manufacturers:
   1. Crane
   2. Kennedy
   3. Lunkenheimer
   4. Milwaukee
   5. Mueller
   6. Stockham
   7. Walworth

J. Stop valves: Shall be ¼” turn ball valve type; no plastic.

K. General valve requirements:
   1. Pressure rated type.
   2. Either flanged or threaded ends; solder ends are not acceptable.
   3. Rising stem or ball valves.

L. Gate valves, steam only: Refer to standard Section 23 22 13.

M. Balancing valves: See standard Section 23 21 13.

PART 3 EXECUTION

3.1 VALVE APPLICATION

A. Chilled, heating, and condenser water piping:
1. Ball valves, NPS 2 and smaller: One-piece, 400-psig CWP rating, copper alloy.
2. Ball valves, NPS 2-1/2 and larger: Class 150, ferrous alloy.
3. Single-flange, high pressure flanged butterfly valves are required for dead-end service.
4. Butterfly valves, NPS 2-1/2 and larger: Flanged, 150-psig CWP rating, ferrous alloy, with EPDM liner.
5. Lift check valves, NPS 2 and smaller: Type 2, Class 125, bronze.
6. Swing check valves, NPS 2 and smaller: Type 4, Class 125, bronze.
7. Lift check valves, NPS 2-1/2 and larger: Type II, Class 125, gray iron.
8. Spring-loaded, lift-disc check valves, NPS 2 and smaller: Type IV, Class 125 minimum.
9. Spring-loaded, lift-disc check valves, NPS 2-1/2 and larger: Type I or II, Class 125, cast iron.

B. Low-pressure, compressed-air piping:
1. Ball valves, NPS 2 and smaller: One-piece, 400-psig CWP rating, copper alloy.
2. Equipment-isolation ball valves, NPS 2 and smaller: Safety-exhaust, bronze.
3. Ball valves, NPS 2-1/2 and larger: Class 150, ferrous alloy.

END OF SECTION 23 05 23