

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Common Work Results for HVAC Section 23 05 00

1.2 PRODUCT OPTIONS AND SUBSTITUTIONS

- .1 Refer to Division 01 for requirements pertaining to product options and substitutions.

1.3 VALVE SIZES

- .1 Valves sizes are specified in preferred metric sizes.

1.4 QUALITY ASSURANCE

- .1 Provide valves of commercial/ institutional standard on this project.
.2 Submit samples prior to ordering.
.3 The Departmental Representative's decision to acceptable standard and quality will be final.

1.5 SOURCE OF SUPPLY

- .1 Valves of same type shall be by a single manufacturer.

1.6 IDENTIFICATION

- .1 Valves shall bear the following information permanently marked on valve body:
.1 Manufacturer's name or trademark.
.2 Pressure rating.
.3 Flow direction.

1.7 SHOP DRAWINGS AND DOCUMENTATION

- .1 Comply with requirements of Section 01 33 10.
.2 Submit valve schedule before ordering.

Part 2 Products

2.1 SERVICE REQUIREMENTS

- .1 Provide valves with pressure/temperature ratings and materials of construction suitable for the service intended.

2.2 GLOBE AND ANGLE VALVES

- .1 Throttling Service and Steam Services 50 mm and smaller:
 - .1 Body: B62 bronze with union bonnet
 - .2 Stem: rising, B62 bronze
 - .3 Disc and Seat Ring: stainless steel
 - .4 Connections: soldered or screwed ends.

2.3 BALL VALVES

- .1 Isolating Service, 50 mm or smaller:
 - .1 Body and Trim: B62 bronze or cast iron
 - .2 Stem: brass or stainless steel
 - .3 Connection: screwed ends or soldered ends or flanged
 - .4 Seats: Buna up to 90°C, Viton up to 150°C, Teflon up to 180°C
 - .5 Ball: brass chrome plated or teflon impregnated cast iron

2.4 BUTTERFLY VALVES

- .1 General Use:
 - .1 Body: cast iron
 - .2 Stem: stainless steel, 300 Series
 - .3 Disc: stainless steel
 - .4 Liner: EPDM to ASTM D2000, Grade E.
 - .5 Connection: flanged or grooved ends
- .2 Heating Systems with temperatures 93°C and greater:
 - .1 Body: cast iron
 - .2 Stem: stainless steel
 - .3 Disc: stainless steel
 - .4 Liner: rated for continuous operation at 115°C
 - .5 Connection: flanged or grooved ends

.3 Isolation Use:

- .1 Body: cast iron
- .2 Stem: stainless steel
- .3 Disc: stainless steel
- .4 Liner: EPDM to ASTM D2000, Grade E.
- .5 Connection: threaded lugs for flanged connection

2.5 CHECK VALVES

.1 Swing Check Valve 50 mm and smaller:

- .1 Body: bronze Y pattern
- .2 Trim: bronze
- .3 Disc: swing
- .4 Connection: screwed or soldered
- .5 Material: ASTM B62

2.6 RADIATION VALVES

.1 Isolation or throttling service, 30 mm and smaller:

- .1 Body: bronze, ball type
- .2 Stem: inside screw
- .3 Disc: renewable composition
- .4 Connection: threaded or union ends (straight or angle pattern)

2.7 PLUG COCKS

.1 50 mm and smaller:

- .1 Body: cast iron
- .2 Plugs and Washers: brass
- .3 Connection: screwed ends

2.8 DRAIN/VENT VALVES

- .1 Globe Type Drain Valves:
 - .1 Body: bronze
 - .2 Disc: compression stop
 - .3 Ends: nipple and cap or hose
- .2 Ball Type Drain Valves:
 - .1 Body: bronze
 - .2 Ends: cap and chain

2.9 CIRCUIT BALANCING VALVES

- .1 50 mm and smaller:
 - .1 Body: bronze
 - .2 Stem: Bronze
 - .3 Hand wheel: Resin type. Minimum of four (4) full 360° turns.
 - .4 Connection: threaded type.
- .2 65 mm and larger
 - .1 Body: cast iron or ductile iron
 - .2 Stem: bronze
 - .3 Hand wheel: Resin type. Minimum of five (5) full 360° turns.
 - .4 Connection: flanged.

Part 3 Execution

3.1 INSTALLATION

- .1 Install valves with stems in upright or horizontal position. Do not install stems in inverted position.
- .2 Install valves to be readily accessible.

3.2 VALVE OPERATORS

- .1 Provide suitable die-cast handwheels for globe, radiation, drain valves and inside hose bibbs.
- .2 Supply one plug cock wrench for every ten plug cocks 50 mm and smaller; supply wrench and set screws with each plug cock 65 mm and larger.
- .3 Provide latch lock throttling handle for butterfly valves 150 mm and smaller and gear operators for 200 mm and larger.

3.3 VALVE SCHEDULE

- .1 Provide valves as indicated on the drawings and as outlined in the following schedule:
 - .1 Globe and Angle Globe Valves:
 - .1 Throttling service
 - .2 Control device
 - .3 Meter bypass
 - .2 Non-Lubricated Plug Cocks:
 - .1 Gas service
 - .2 Balancing service where shut-off or isolating valve is also provided
 - .3 Drain Valve:
 - .1 Near main shut-off valves
 - .2 Low points in piping systems
 - .3 Bases of vertical risers
 - .4 At equipment
 - .4 Butterfly Valves:
 - .1 Interchangeable with gate and globe valves in water systems only
 - .5 Ball Valves:
 - .1 Shut-off and isolation
 - .2 Isolating service

- .3 Domestic water (hot and cold)
- .4 Heating system water
- .6 Circuit Balancing Valves:
 - .1 On hydronic piping systems where shown on drawings and details.
 - .2 On domestic hot water recirculation systems.
- .7 Radiation Valves and Ball Valves:
 - .1 Heating/cooling coils.
 - .2 Isolation of unit heaters and force flows.

END OF SECTION