

## VALVES - CAST IRON

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### 1. GENERAL

#### 1.1 Summary

- .1 Section Includes:
  - .1 Check valve.
- .2 Related Sections:
  - .1 Section 23 05 05 - Installation of Pipework.

#### 1.2 References

- .1 American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME).
  - .1 ANSI/ASME B16.1-2010, Cast Iron Pipe Flanges and Flanged Fittings.
- .2 ASTM International (ASTM).
  - .1 ASTM A 49-01(2006), Specification for Heat-Treated Carbon Steel Joint Bars.
  - .2 ASTM A 126-04(2009), Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
  - .3 ASTM B 61-08, Specification for Steam or Valve Bronze Castings.
  - .4 ASTM B 62-09, Specification for Composition Bronze or Ounce Metal Castings.
  - .5 ASTM B 85-10, Specification for Aluminum-Alloy Die Castings.
  - .6 ASTM B 209-10, Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- .3 Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS).
  - .1 MSS SP-70-2006, Cast Iron Gate Valves, Flanged and Threaded Ends.
  - .2 MSS SP-71-2005, Grey Iron Swing Check Valves, Flanged and Threaded Ends.
  - .3 MSS SP-85-2002, Cast Iron Globe and Angle Valves, Flanged and Threaded Ends.

#### 1.3 Submittals

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Submit shop drawings and product data in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Submit data for valves specified in this section.

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.2 Closeout Submittals:

- .1 Submit maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

### 1.4 Maintenance

.1 Extra Materials:

.2 Furnish following spare parts:

- .1 Gaskets for flanges: two for every 10 flanged joints.

## 2. PRODUCTS

### 2.1 Material

.1 Valves:

- .1 Except for specialty valves, to be of single manufacturer.

.2 Standard specifications:

- .1 Check valves: MSS SP-71.

.3 Requirements common to valves, unless specified otherwise:

- .1 Body, bonnet: cast iron to ASTM B 209 Class B.  
.2 Connections: flanged ends plain face to ANSI B16.1.  
.3 Identification tag: with catalogue number, size, other pertinent data.

.4 All products to have CRN registration numbers.

### 2.2 Check Valves

.1 Swing check valves, Class 125:

- .1 Body and bolted cover: with tapped and plugged opening on each side for hinge pin. Flanged ends: plain faced with smooth finish.

- .1 Up to 400mm: cast iron to ASTM A 126 Class B.  
.2 450mm and over: cast iron to ASTM A 126 Class C.

.2 Ratings:

- .1 65mm – 300mm: 860 kPa steam; 1.4 MPa CWP.  
.2 350mm - 400mm: 860 kPa steam; 1.03 MPa CWP.

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- .3 450mm and over: 1.03 MPa CWP.
- .3 Disc: rotating for extended life.
  - .1 Up to 150mm: bronze to ASTM B 62.
  - .2 200mm and over: bronze-faced cast iron.
- .4 Seat rings: renewable bronze to ASTM B 62 screwed into body.
- .5 Hinge pin, bushings: renewable bronze to ASTM B 62.
- .6 Disc: A126 Class B, secured to stem, rotating for extended life.
- .7 Seat: cast iron, integral with body.
- .8 Hinge pin: exelloy; bushings: malleable iron.
- .9 Identification tag: fastened to cover.
- .10 Hinge: galvanized malleable iron.
- .2 Swing check valves, 65mm – 200mm Class 250:
  - .1 Body and bolted cover: cast iron to ASTM A 126 Class B with tapped and plugged opening on each side for hinge pin.
  - .2 Flanged ends: 2 mm raised face with serrated finish.
  - .3 Rating: 1.7 MPa psi steam; 3.4 MPa CWP.
  - .4 Disc: rotating for extended life.
    - .1 Up to 65mm: bronze to ASTM B 61.
    - .2 NPS 100mm-200mm: Iron faced with ASTM B 61 bronze.
  - .5 Seat rings: renewable bronze to ASTM B 61, screwed into body.
  - .6 Hinge pin, bushings: renewable, bronze to ASTM B 61.
  - .7 Hinge: galvanized malleable iron.
  - .8 Identification tag: fastened to cover.

### 2.3 Silent Check Valves

- .1 Construction:
  - .1 Body: malleable or ductile iron with integral seat.
  - .2 Pressure rating: class 125, WP = 860 kPa.

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- .3 Connections: grooved ends.
- .4 Disc: bronze or stainless steel renewable rotating disc.
- .5 Seat: renewable, EPDM.
- .6 Stainless steel spring, heavy duty.

**3. EXECUTION**

**3.1 Installation**

- .1 Install rising stem valves in upright position with stem above horizontal.

**END OF SECTION**