

MSS SP-71-1997

Gray Iron Swing Check Valves, Flanged and Threaded Ends

Standard Practice
Developed and Approved by the
Manufacturers Standardization Society of the
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Non-toleranced dimensions in this Standard Practice are nominal, and, unless specified, shall be considered "for reference only".

Originally Approved February, 1970

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FOREWORD

The 1997 edition of MSS SP-71, in addition to various editorial changes, includes changes to: provide a more complete metric version for reference use, delete the Class 800 Pressure-Temperature rating, and expand Annex C to include ISO references.

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1. SCOPE

1.1 This standard practice covers gray iron swing check valves with flanged and threaded ends for general purpose service in essentially horizontal lines. The use of swing check valves in steeply inclined or vertical lines requires special consideration.

1.2 These valves are suitable within the sizes and pressure-temperature ratings specified herein for general purpose service.

1.3 This standard practice also includes, directly or by reference, stipulations on chemical and physical properties of materials, and dimensions of end connections in common use.

2. VALVE DESIGNATION, CLASSES AND SIZES

2.1 Valve Types. (a) Valve types covered herein are illustrated in Figures A1 through A4 in Annex A. Swing check valves of the full waterway type when fully opened shall have a flow of not less than the area of a circle having a diameter equal to the nominal pipe size. The clearway type shall allow the disc assembly to swing above the waterway when fully opened.

Type I (Figure A1) — Full waterway, metal to metal seats.

Type II (Figure A2) — Full waterway, composition to metal seats.

Type III (Figure A3) — Clear waterway, metal to metal seats.

Type IV (Figure A4) — Clear waterway, composition to metal seats.

2.2 Trims

- a) Bronze
- b) All-iron
- c) Stainless Steel
- d) Composition or Resilient

(a) Note: The valve sketches herein are for the purpose of illustration and nomenclature only. They are not intended to exclude any design meeting this Standard Practice.

2.3 Classes

- 125
- 250

2.4 Nominal Pipe Sizes. Nominal pipe sizes covered herein are:

- a) NPS 2-24 (DN50-600) flanged end.
- b) NPS 2-6 (DN50-150) threaded end.

3. PRESSURE-TEMPERATURE RATINGS

3.1 Pressure-Temperature ratings for the various classes of valves are shown in Table 1. Metric units (bar) are shown in Table B1 in Annex B. The ratings specified are for valves with metal seating surfaces. Pressure-temperature ratings for valves with non-metallic seat materials must be limited to reflect the physical characteristics of these materials at each temperature, and may be lower but in no case higher than values shown in Tables I and B1.

3.2 The temperature shown for the corresponding rating shall be the metal temperature of the pressure retaining parts. It shall be assumed that the metal temperature will be the temperature of the contained fluid. Use of a pressure rating at a metal temperature other than that of the contained fluid shall be the responsibility of the user.

4. MATERIALS

4.1 General. This standard practice is intended to cover minimum physical and chemical requirements. Materials of superior properties may be substituted. Users are cautioned against applications with fluids which may react chemically with any materials used in these valves. Consultation with the manufacturer is advised to determine suitability in cases of doubt.

4.1.1 Body and Cover. The body and cover shall be in accordance with ASTM A 126 Class B, "Gray Iron Castings for Valves, Flanges and Pipe Fittings."