

MSS SP-70-2011

Gray Iron Gate Valves, Flanged and Threaded Ends

Standard Practice
Developed and Approved by the
Manufacturers Standardization Society of the
Valve and Fittings Industry, Inc.
127 Park Street, NE
Vienna, Virginia 22180-4602
Phone: (703) 281-6613
Fax: (703) 281-6671
E-mail: info@mss-hq.org



www.mss-hq.org

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Substantive changes in this 2011 edition are “flagged” by parallel bars as shown on the margins of this paragraph. The specific detail of the change may be determined by comparing the material flagged with that in the previous edition.

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FOREWORD

The 1998 edition of MSS SP-70, 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.

The 2006 edition of MSS SP-70 included the following changes: 1) deleted ASTM A536 and ASTM A395 materials, since valves made of these materials will now be included in SP-128; 2) deleted PN designations since these were easily confused with designations used in international standards that were based on other material specifications and pressure-temperature rating procedures; 3) deleted DN designations in Table B1 resulting from PN deletion; 4) ISO references were deleted from Annex C as a result of change 2 and 3 above; 5) added minimum wall thickness requirements, that were previously omitted, in order to qualify the Class 125 and Class 250 ratings designations used in this Standard Practice; 6) added Type IV valves with illustrations; and 7) replaced the terminology “cast” iron with “gray” iron.

This 2011 edition of MSS SP-70, in addition to various editorial and formatting updates, includes changes to: (1) revise Section 4.1.4 by adding “gray iron” as an acceptable handwheel material; (2) clarify the leakage rate in Section 7.4; and (3) update the organizations and references in Annex C.

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GRAY IRON GATE VALVES, FLANGED AND THREADED ENDS

1. SCOPE

1.1 This Standard Practice covers gray iron gate valves with flanged or threaded ends.

1.2 This Standard Practice covers valves in 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* Valve types covered herein are illustrated in Figures A1, A2, A3, A4, A5, A6, A7 and A8 in Annex A⁽¹⁾.

Type I — Solid Wedge Disc
(See Figures A1 and A2)

Type II — Split Wedge Disc
(See Figures A3 and A4)

Type III — Double Disc, Parallel Seat
(See Figures A5 and A6)

Type IV — Resilient Seat
(See Figures A7 and A8)

2.2 *Construction Designations*

Designation:

NT — Non-Rising Stem, Threaded End

NF — Non-Rising Stem, Flanged End

OT — Outside Screw and Yoke,
Threaded End

OF — Outside Screw and Yoke,
Flanged End

2.3 *Trims*

(a) All Bronze

(b) All Iron

(c) Bronze with Ferrous Stem

(d) Resilient Seating

2.4 *Classes*

125

250

2.5 *Sizes*

(a) $2 \leq \text{NPS} \leq 48$ flanged end

(b) $2 \leq \text{NPS} \leq 6$ threaded end

3. PRESSURE-TEMPERATURE RATINGS

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

Note: (1) The figures in Annex A are for the purpose of illustration and nomenclature only. They are not intended to exclude any design meeting this Standard Practice.