

MSS SP-125-2000

**Gray Iron and Ductile Iron
In-Line, Spring-Loaded,
Center-Guided Check Valves**

Standard Practice
Developed and Approved by the
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TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1 SCOPE.....	1
2 VALVE STYLES AND CLASSES	1
3 PRESSURE AND TEMPERATURE RATINGS	1
4 MATERIALS	1
5 DESIGN	2
6 WORKMANSHIP	3
7 TESTS.....	3
8 MARKING.....	3
9 PAINTING.....	3
TABLE 1 Disc and Seat Materials	2
2 Pressure Ratings at 150° F (65° C), Non-Shock	2
3 Face-to-Face Dimensions of Wafer-Style Check Valves	2
4 Face-to-Face Dimensions of Compact Wafer-Style Check Valves	3
5 Face-to-Face Dimensions of Globe-Style Check Valves	3
6 Minimum Duration of Tests	3
ANNEX A – Valve Types – Figures A1 to A6	4
FIGURE A1 Wafer Style	4
A2 Compact Wafer-Style	4
A3 Globe-Style	4
A4 Wafer-Style	5
A5 Compact Wafer-Style	5
A6 Flanged Globe-Style	5
ANNEX B – Referenced Standards and Applicable Dates	6

GRAY IRON AND DUCTILE IRON, IN-LINE, SPRING-LOADED, CENTER-GUIDED CHECK VALVES

1. SCOPE

1.1 This Standard Practice covers in-line, internally spring-loaded, center-guided check valves made of gray iron or ductile iron. These valves, having the feature of limiting fluid flow to one direction only, are intended for use with clean fluids (i.e. fluids that do not contain solids), including potable water, waterworks, and other industrial applications, in horizontal and vertical installations.

2. VALVE STYLES AND CLASSES

2.1 *Valve styles.* The valve styles included in this standard are determined by the configuration of the body.

2.1.1 *Wafer.* Wafer-style check valves have a single flange body with an outside diameter equal to the mating pipe flanges. The valve body may be designed with holes passing through the body (see Figure A1) or with threaded lugs. The size range for wafer-style check valves is NPS 2-10 (DN 50-250).

2.1.2 *Compact Wafer.* Compact wafer-style valves have a reduced outside body diameter, or slots, to provide bolt clearance for long bolts or studs (see Figure A2). The size range for compact wafer-style check valves is NPS 2-10 (DN 50-250).

2.1.3 *Globe.* Globe-style check valves have two integrally cast flanges and a rounded-center body section to provide increased flow area around the valve disc (see Figure A3). The size range of globe-style check valves is NPS 2-42 (DN 50-1050).

2.2 *Flange Classes.* Valve end connections shall conform to the following requirements.

2.2.1 Wafer-style valves shall have bolt holes or threaded holes in accordance with ASME B16.1 for gray iron, Class 125 or 250 and in accordance with ASME B16.42 for ductile iron, Class 150 or 300.

2.2.2 Compact wafer-style valves shall have a reduced body diameter to accommodate flange bolts in accordance with ASME B16.1 or B16.42.

2.2.3 Globe-style flange dimensions shall be in accordance with ASME B16.1 for gray iron, Class

125 or 250 and in accordance with ASME B16.42 for ductile iron, Class 150 or 300.

2.2.5 *Gaskets.* Full face or ring gaskets are required between the valve ends and the mating pipeline flanges to obtain a pressure tight joint.

3. PRESSURE AND TEMPERATURE RATINGS

3.1 The non-shock pressure ratings for various classes of valves are specified in Table 2.

3.2 The check valves in this Standard Practice are intended for use in clean fluids with a temperature between 33° F and 150° F (1° C and 65° C). For elevated temperature installations, the manufacturer should be consulted.

4. MATERIALS

4.1 *General.* This practice is intended to cover the minimum mechanical and chemical requirements for the items depicted in Figures A4, A5, and A6.

4.1.1 *Body.* The body shall be gray iron in accordance with ASTM A 126 Class B or ductile iron in accordance with ASTM A 395 or ASTM A 536, Grades 70-50-05, 65-45-12 or 60-45-18.

4.1.2 *Disc and Seat.* The disc and seat shall be copper alloy or stainless steel, as specified in Table 1. Other bronze alloys may be specified by the purchaser provided the lead content is below 8 percent and the zinc content below 16 percent.

TABLE 1. DISC AND SEAT MATERIALS

MATERIAL	ASTM NO.	GRADE
Bronze	B 62, B 584	C83600
	B 584	C84400
Aluminum Bronze	B 148	C95500
Stainless Steel	A 351	CF8
	A 351	CF8M

4.1.3 *Spring.* The spring shall be per ASTM A 313, Type 302, 304, 316, or 17-7PH.