SECTION 220523.14 - CHECK VALVES FOR PLUMBING PIPING

Revise this Section by deleting and inserting text to meet Project-specific requirements.

This Section uses the term "Architect." Change this term to match that used to identify the design professional as defined in the General and Supplementary Conditions.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
	* + 1. RELATED DOCUMENTS

Retain or delete this article in all Sections of Project Manual.

* + - * 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
			1. SUMMARY
				1. Section Includes:

Bronze lift check valves.

Bronze swing check valves.

Bronze swing check valves, press ends.

Iron swing check valves.

Iron swing check valves with closure control.

Iron, grooved-end swing check valves.

Iron, center-guided check valves.

Iron, plate-type check valves.

* + - 1. DEFINITIONS

Retain terms that remain after this Section has been edited for a project.

* + - * 1. CWP: Cold working pressure.
				2. EPDM: Ethylene propylene-diene terpolymer rubber.
				3. NBR: Acrylonitrile-butadiene, Buna-N, or nitrile rubber.
			1. SUBMITTALS
				1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
				2. Manufacturer’s installation instructions shall be provided along with product data.
				3. Submittals shall be provided in the order in which they are submitted and tabbed (for combined submittals).
				4. Product Data: For each type of valve.

Retain subparagraph below if products come contact with potable water.

Certification that products comply with NSF 61[**and NSF 372**].

* + - 1. DELIVERY, STORAGE, AND HANDLING

Information in this article is paraphrased from MSS publications.

* + - * 1. Prepare valves for shipping as follows:

Protect internal parts against rust and corrosion.

Protect threads, flange faces, grooves, and weld ends.

Set check valves in either closed or open position.

* + - * 1. Use the following precautions during storage:

Maintain valve end protection.

Store valves indoors and maintain at higher-than-ambient-dew-point temperature. If outdoor storage is necessary, store valves off the ground in watertight enclosures.

* + - * 1. Use sling to handle large valves; rig sling to avoid damage to exposed parts. Do not use handwheels or stems as lifting or rigging points.
1. PRODUCTS

Manufacturers and products listed in SpecAgent and MasterWorks Paragraph Builder are neither recommended nor endorsed by the AIA or Deltek. Before inserting names, verify that manufacturers and products listed there comply with requirements retained or revised in descriptions and are both available and suitable for the intended applications.

* + - 1. GENERAL REQUIREMENTS FOR VALVES

Plumbing valve applications specified in this Section are limited to NPS 24 (DN 600). Many valves specified are available in larger sizes.

* + - * 1. Source Limitations for Valves: Obtain each type of valve from single source from single manufacturer.
				2. ASME Compliance:

ASME B1.20.1 for threads for threaded end valves.

ASME B16.1 for flanges on iron valves.

ASME B16.10 and ASME B16.34 for ferrous valve dimensions and design criteria.

Valve solder-joint connections are common in smaller sizes of plumbing piping. Soldering and brazing methods used to achieve required pressure-temperature ratings may damage internal valve parts. Special installation requirements for soldered valves may make threaded valves more cost-effective.

Caution: Use solder with melting point below 840 deg F (454 deg C).

ASME B16.18 for solder joint.

ASME B31.9 for building services piping valves.

* + - * 1. AWWA Compliance: Comply with AWWA C606 for grooved-end connections.

Retain paragraph below if products come into contact with potable water.

* + - * 1. Drinking Water System Components - Health Effects and Drinking Water System Components - Lead Content Compliance: NSF 61 and NSF 372.
				2. Bronze valves shall be made with dezincification-resistant materials. Bronze valves made with copper alloy (brass) containing more than 15 percent zinc are not permitted.

Caution: Revise pressure ratings and insert temperature ratings in valve articles if valves with higher ratings are required. Valves larger than NPS 12 (DN 300) typically have a lower pressure rating than smaller valves. Verify pressure requirements for large valves.

* + - * 1. Valve Pressure-Temperature Ratings: Not less than indicated and as required for system pressures and temperatures.
				2. Valve Sizes: Same as upstream piping unless otherwise indicated.
				3. Valve Bypass and Drain Connections: MSS SP-45.
			1. BRONZE LIFT CHECK VALVES

Retain one or both of "Class 125, Lift Check Valves with Bronze Disc" and "Class 125, Lift Check Valves with Nonmetallic Disc" paragraphs below if bronze lift check valves are required. MSS SP-80 covers bronze lift check valves from NPS 1/4 to NPS 3 (DN 8 to DN 80).

* + - * 1. Bronze Lift Check Valves with Bronze Disc, Class 125:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9517) Subject to compliance with requirements, provide products by one of the following:

[Crane; a Crane brand](http://www.specagent.com/Lookup?uid=123457115235).

[Jenkins Valves; a Crane Co. brand](http://www.specagent.com/Lookup?uid=123457115233).

[Stockham; a Crane Co. brand](http://www.specagent.com/Lookup?uid=123457115234).

Approved equivalent.

Description:

Standard: MSS SP-80, Type 1.

CWP Rating: 200 psig.

Body Design: Vertical flow.

Body Material: ASTM B61 or ASTM B62, bronze.

Ends: Threaded or soldered. See valve schedule articles.

Disc: Bronze.

* + - * 1. Bronze Lift Check Valves with Nonmetallic Disc, Class 125:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9518) Subject to compliance with requirements, provide products by one of the following:

[Flo Fab Inc](http://www.specagent.com/Lookup?uid=123457115237).

[Hammond Valve](http://www.specagent.com/Lookup?uid=123457115238).

[KITZ Corporation](http://www.specagent.com/Lookup?uid=123457115239).

[Milwaukee Valve Company](http://www.specagent.com/Lookup?uid=123457115240).

[Mueller Steam Specialty; A WATTS Brand](http://www.specagent.com/Lookup?uid=123457115244).

[NIBCO INC](http://www.specagent.com/Lookup?uid=123457115242).

[Red-White Valve Corp](http://www.specagent.com/Lookup?uid=123457115243).

WATTS.

Approved equivalent.

Description:

Standard: MSS SP-80, Type 2.

CWP Rating: 200 psig.

Body Design: Vertical flow.

Body Material: ASTM B61 or ASTM B62, bronze.

Ends: Threaded or soldered. See valve schedule articles.

Disc: NBR, PTFE.

* + - 1. BRONZE SWING CHECK VALVES

Retain one of paragraphs below if bronze swing check valves are required. MSS SP-80 covers bronze swing check valves from NPS 1/4 to NPS 3 (DN 8 to DN 80).

* + - * 1. Bronze Swing Check Valves with Bronze Disc, Class 125:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9519) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Apollo Valves; a part of Aalberts Integrated Piping Systems](http://www.specagent.com/Lookup?uid=123457115245).

[Crane Valves; a Crane Co. brand](http://www.specagent.com/Lookup?uid=123457205023).

[Milwaukee Valve Company](http://www.specagent.com/Lookup?uid=123457115252).

[NIBCO INC](http://www.specagent.com/Lookup?uid=123457115253).

Approved equivalent.

Description:

Standard: MSS SP-80, Type 3.

CWP Rating: 200 psig.

Body Design: Horizontal flow.

Body Material: ASTM B62, bronze.

Ends: Threaded or soldered. See valve schedule articles.

Disc: Bronze.

* + - * 1. Bronze Swing Check Valves with Nonmetallic Disc, Class 125:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9520) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Apollo Valves; a part of Aalberts Integrated Piping Systems](http://www.specagent.com/Lookup?uid=123457115268).

[Crane Valves; a Crane Co. brand](http://www.specagent.com/Lookup?uid=123457205030).

[Milwaukee Valve Company](http://www.specagent.com/Lookup?uid=123457115264).

[NIBCO INC](http://www.specagent.com/Lookup?uid=123457115265).

Approved equivalent.

Description:

Standard: MSS SP-80, Type 4.

CWP Rating: 200 psig.

Body Design: Horizontal flow.

Body Material: ASTM B62, bronze.

Ends: Threaded or soldered. See valve schedule articles.

Disc: PTFE.

* + - * 1. Bronze Swing Check Valves with Bronze Disc, Class 150:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9521) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Apollo Valves; a part of Aalberts Integrated Piping Systems](http://www.specagent.com/Lookup?uid=123457115280).

[Crane Valves; a Crane Co. brand](http://www.specagent.com/Lookup?uid=123457205036).

[Milwaukee Valve Company](http://www.specagent.com/Lookup?uid=123457115276).

[NIBCO INC](http://www.specagent.com/Lookup?uid=123457115277).

Approved equivalent.

Description:

Standard: MSS SP-80, Type 3.

CWP Rating: 300 psig.

Body Design: Horizontal flow.

Body Material: ASTM B62, bronze.

Ends: Threaded or soldered. See valve schedule articles.

Disc: Bronze.

* + - * 1. Bronze Swing Check Valves with Nonmetallic Disc, Class 150:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9522) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Crane Valves; a Crane Co. brand](http://www.specagent.com/Lookup?uid=123457205041).

[Milwaukee Valve Company](http://www.specagent.com/Lookup?uid=123457115210).

[NIBCO INC](http://www.specagent.com/Lookup?uid=123457115211).

Approved equivalent.

Description:

Standard: MSS SP-80, Type 4.

CWP Rating: 300 psig.

Body Design: Horizontal flow.

Body Material: ASTM B62, bronze.

Ends: Threaded or soldered. See valve schedule articles.

Disc: PTFE.

* + - * 1. Bronze Swing Check Valves, Press Ends:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=13431) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Apollo Valves; a part of Aalberts Integrated Piping Systems](http://www.specagent.com/Lookup?uid=123457115478).

[Crane Valves; a Crane Co. brand](http://www.specagent.com/Lookup?uid=123457199432).

[Milwaukee Valve Company](http://www.specagent.com/Lookup?uid=123457115480).

[NIBCO INC](http://www.specagent.com/Lookup?uid=123457115481).

Approved equivalent.

Description:

Standard: MSS SP-80 and MSS SP-139.

CWP Rating: Minimum 200 psig.

Body Design: Horizontal flow.

Body Material: ASTM B584, bronze.

Ends: Press.

Press Ends Connection Rating: Minimum 200 psig

Disc: Brass or bronze.

* + - 1. IRON SWING CHECK VALVES

Retain one of paragraphs below if iron swing check valves are required. MSS SP-71 covers iron swing check valves from NPS 2 to NPS 24 (DN 50 to DN 600). Valves specified in this article are from NPS 2-1/2 to NPS 12 (DN 65 to DN 300).

* + - * 1. Iron Swing Check Valves with Metal Seats, Class 125:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9523) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Apollo Valves; a part of Aalberts Integrated Piping Systems](http://www.specagent.com/Lookup?uid=123457115295).

[Crane Valves; a Crane Co. brand](http://www.specagent.com/Lookup?uid=123457205051).

[Milwaukee Valve Company](http://www.specagent.com/Lookup?uid=123457115289).

[Victaulic Company](http://www.specagent.com/Lookup?uid=123457205056).

Approved equivalent.

Description:

Standard: MSS SP-71, Type I.

CWP Rating: 200 psig.

Body Design: Clear or full waterway.

Body Material: ASTM A126, gray iron with bolted bonnet.

Ends: Flanged or threaded. See valve schedule articles.

Trim: Bronze.

Gasket: Asbestos free.

* + - * 1. Iron Swing Check Valves with Nonmetallic-to-Metal Seats, Class 125:

Description:

Standard: MSS SP-71, Type I.

CWP Rating: 200 psig.

Body Design: Clear or full waterway.

Body Material: ASTM A126, gray iron with bolted bonnet.

Ends: Flanged or threaded. See valve schedule articles.

Trim: Composition.

Seat Ring: Bronze.

Disc Holder: Bronze.

Disc: PTFE.

Gasket: Asbestos free.

* + - * 1. Iron Swing Check Valves with Metal Seats, Class 250:

Description:

Standard: MSS SP-71, Type I.

CWP Rating: 500 psig.

Body Design: Clear or full waterway.

Body Material: ASTM A126, gray iron with bolted bonnet.

Ends: Flanged or threaded. See valve schedule articles.

Trim: Bronze.

Gasket: Asbestos free.

* + - 1. IRON SWING CHECK VALVES WITH CLOSURE CONTROL

Retain one or both of "Class 125, Iron Swing Check Valves with Lever- and Spring-Closure Control" and "Class 125, Iron Swing Check Valves with Lever and Weight-Closure Control" paragraphs below if iron swing check valves are required. MSS SP-71 covers iron swing check valves from NPS 2 to NPS 24 (DN 50 to DN 600). Valves specified in this article are from NPS 2-1/2 to NPS 12 (DN 65 to DN 300).

* + - * 1. Iron Swing Check Valves with Lever- and Spring-Closure Control, Class 125:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9526) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[APCO DeZurik Valve Co](http://www.specagent.com/Lookup?uid=123457207089).

[Apollo Valves; a part of Aalberts Integrated Piping Systems](http://www.specagent.com/Lookup?uid=123457207090).

[Bray International, Inc](http://www.specagent.com/Lookup?uid=123457207091).

[Clow Valve Company; a subsidiary of McWane, Inc](http://www.specagent.com/Lookup?uid=123457207092).

[Cooper Valves](http://www.specagent.com/Lookup?uid=123457207093).

[Crispin Valve](http://www.specagent.com/Lookup?uid=123457207094).

[GA Industries, Inc](http://www.specagent.com/Lookup?uid=123457207095).

[Kennedy Valve Company; a division of McWane, Inc](http://www.specagent.com/Lookup?uid=123457207096).

Approved equivalent.

Description:

Standard: MSS SP-71, Type I.

CWP Rating: 200 psig.

Body Design: Clear or full waterway.

Body Material: ASTM A126, gray iron with bolted bonnet.

Ends: Flanged or threaded. See valve schedule articles.

Trim: Bronze.

Gasket: Asbestos free.

Closure Control: Factory-installed exterior lever and weight.

* + - * 1. Iron Swing Check Valves with Lever and Weight-Closure Control, Class 125:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9527) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[APCO DeZurik Valve Co](http://www.specagent.com/Lookup?uid=123457207097).

[Apollo Valves; a part of Aalberts Integrated Piping Systems](http://www.specagent.com/Lookup?uid=123457115318).

[Bray International, Inc](http://www.specagent.com/Lookup?uid=123457207098).

[Clow Valve Company; a subsidiary of McWane, Inc](http://www.specagent.com/Lookup?uid=123457207099).

[Cooper Valves](http://www.specagent.com/Lookup?uid=123457207100).

[Crispin Valve](http://www.specagent.com/Lookup?uid=123457207101).

[GA Industries, Inc](http://www.specagent.com/Lookup?uid=123457207102).

[Kennedy Valve Company; a division of McWane, Inc](http://www.specagent.com/Lookup?uid=123457207103).

[Milwaukee Valve Company](http://www.specagent.com/Lookup?uid=123457115322).

Approved equivalent.

Description:

Standard: MSS SP-71, Type I.

CWP Rating: 200 psig.

Body Design: Clear or full waterway.

Body Material: ASTM A126, gray iron with bolted bonnet.

Ends: Flanged or threaded. See valve schedule articles.

Trim: Bronze.

Gasket: Asbestos free.

Closure Control: Factory-installed exterior lever and weight.

* + - 1. IRON, GROOVED-END SWING CHECK VALVES

Retain this article if iron grooved-end swing check valves are required. No standard for these valves was located. They are available from NPS 2 to NPS 12 (DN 50 to DN 300).

* + - * 1. Iron, Grooved-End Swing Check Valves, 300 CWP:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9528) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Anvil International](http://www.specagent.com/Lookup?uid=123457115327).

[Shurjoint; a part of Aalberts Integrated piping Systems](http://www.specagent.com/Lookup?uid=123457115328).

[Tyco by Johnson Controls Company](http://www.specagent.com/Lookup?uid=123457115329).

[Victaulic Company](http://www.specagent.com/Lookup?uid=123457115330).

Approved equivalent.

Description:

CWP Rating: 300 psig.

Body Material: ASTM A536, ductile iron.

Seal: EPDM.

Disc: Spring operated, ductile iron or stainless steel.

* + - 1. IRON, CENTER-GUIDED, SPRING-LOADED CHECK VALVES

Retain one of paragraphs below if iron center-guided check valves are required. MSS SP-125 covers iron center-guided check valves from NPS 2 to NPS 42 (DN 50 to DN 1050). Valves specified in this article are from NPS 2-1/2 to NPS 12 (DN 65 to DN 300).

* + - * 1. Iron, Compact-Wafer, Center-Guided Check Valves with Metal Seat, Class 125:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9529) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Anvil International](http://www.specagent.com/Lookup?uid=123457115216).

[APCO DeZurik Valve Co](http://www.specagent.com/Lookup?uid=123457115217).

[Apollo Valves; a part of Aalberts Integrated Piping Systems](http://www.specagent.com/Lookup?uid=123457205057).

[Cooper Valves](http://www.specagent.com/Lookup?uid=123457205058).

[Crispin Valve](http://www.specagent.com/Lookup?uid=123457115218).

[DFT Inc](http://www.specagent.com/Lookup?uid=123457115219).

[Flomatic Corporation](http://www.specagent.com/Lookup?uid=123457205059).

[GA Industries, Inc](http://www.specagent.com/Lookup?uid=123457115221).

[Keckley Company](http://www.specagent.com/Lookup?uid=123457205060).

[KITZ Corporation](http://www.specagent.com/Lookup?uid=123457205061).

[Metraflex Company (The)](http://www.specagent.com/Lookup?uid=123457115223).

[Milwaukee Valve Company](http://www.specagent.com/Lookup?uid=123457115224).

Approved equivalent.

Description:

Standard: MSS SP-125.

CWP Rating: 200 psig.

Body Material: ASTM A126, gray iron.

Style: Compact wafer, spring loaded.

Seat: Bronze.

* + - * 1. Iron Globe, Center-Guided Check Valves with Metal Seat, Class 125:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9530) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Crispin Valve](http://www.specagent.com/Lookup?uid=123457115333).

[DFT Inc](http://www.specagent.com/Lookup?uid=123457115334).

[Flomatic Corporation](http://www.specagent.com/Lookup?uid=123457115335).

[Metraflex Company (The)](http://www.specagent.com/Lookup?uid=123457115337).

[Milwaukee Valve Company](http://www.specagent.com/Lookup?uid=123457115338).

[Val-Matic Valve & Manufacturing Corp](http://www.specagent.com/Lookup?uid=123457115343).

[WATTS](http://www.specagent.com/Lookup?uid=123457115344).

Approved equivalent.

Description:

Standard: MSS SP-125.

CWP Rating: 200 psig.

Body Material: ASTM A126, gray iron.

Style: Globe, spring loaded.

Ends: Flanged.

Seat: Bronze.

* + - * 1. Iron, Compact-Wafer, Center-Guided Check Valves with Metal Seat, Class 150:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9531) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[APCO DeZurik Valve Co](http://www.specagent.com/Lookup?uid=123457115346).

[Crispin Valve](http://www.specagent.com/Lookup?uid=123457115347).

Approved equivalent.

Description:

Standard: MSS SP-125.

CWP Rating: 300 psig.

Body Material: ASTM A395 or ASTM A536, ductile iron.

Style: Compact wafer, spring loaded.

Seat: Bronze.

* + - * 1. Iron Globe, Center-Guided Check Valves with Metal Seat, Class 150:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9532) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Crispin Valve](http://www.specagent.com/Lookup?uid=123457115351).

Approved equivalent.

Description:

Standard: MSS SP-125.

CWP Rating: 300 psig.

Body Material: ASTM A395 or ASTM A536, ductile iron.

Style: Globe, spring loaded.

Ends: Flanged.

Seat: Bronze.

* + - * 1. Iron, Compact-Wafer, Center-Guided Check Valves with Metal Seat, Class 250:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9533) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[APCO DeZurik Valve Co](http://www.specagent.com/Lookup?uid=123457115354).

[DFT Inc](http://www.specagent.com/Lookup?uid=123457115356).

[Metraflex Company (The)](http://www.specagent.com/Lookup?uid=123457115359).

[Val-Matic Valve & Manufacturing Corp](http://www.specagent.com/Lookup?uid=123457115363).

Approved equivalent.

Description:

Standard: MSS SP-125.

CWP Rating: 400 psig.

Body Material: ASTM A126, gray iron.

Style: Compact wafer, spring loaded.

Seat: Bronze.

* + - * 1. Iron Globe, Center-Guided Check Valves with Metal Seat, Class 250:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9534) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[DFT Inc](http://www.specagent.com/Lookup?uid=123457115367).

[Flomatic Corporation](http://www.specagent.com/Lookup?uid=123457115368).

[Metraflex Company (The)](http://www.specagent.com/Lookup?uid=123457115370).

[Val-Matic Valve & Manufacturing Corp](http://www.specagent.com/Lookup?uid=123457115374).

Approved equivalent.

Description:

Standard: MSS SP-125.

CWP Rating: 400 psig.

Body Material: ASTM A126, gray iron.

Style: Globe, spring loaded.

Ends: Flanged.

Seat: Bronze.

* + - * 1. Iron, Compact-Wafer, Center-Guided Check Valves with Metal Seat, Class 300:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9535) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Crispin Valve.

Approved equivalent.

Description:

Standard: MSS SP-125.

CWP Rating: 500 psig.

Body Material: ASTM A395 or ASTM A536, ductile iron.

Style: Compact wafer, spring loaded.

Seat: Bronze.

* + - * 1. Iron Globe, Center-Guided Check Valves with Metal Seat, Class 300:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9536) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Crispin Valve.

Approved equivalent.

Description:

Standard: MSS SP-125.

CWP Rating: 500 psig.

Body Material: ASTM A395 or ASTM A536, ductile iron.

Style: Globe, spring loaded.

Ends: Flanged.

Seat: Bronze.

* + - * 1. Iron, Compact-Wafer, Center-Guided Check Valves with Resilient Seat, Class 125:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9537) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[APCO DeZurik Valve Co](http://www.specagent.com/Lookup?uid=123457115384).

[Apollo Valves; a part of Aalberts Integrated Piping Systems](http://www.specagent.com/Lookup?uid=123457115394).

[DFT Inc](http://www.specagent.com/Lookup?uid=123457115386).

[Val-Matic Valve & Manufacturing Corp](http://www.specagent.com/Lookup?uid=123457115393).

Approved equivalent.

Description:

Standard: MSS SP-125.

CWP Rating: 200 psig.

Body Material: ASTM A126, gray iron.

Style: Compact wafer, spring loaded.

Seat: [**EPDM**] [**or**] [**NBR**] <**Insert material**>.

* + - * 1. Iron Globe, Center-Guided Check Valves with Resilient Seat, Class 125:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9538) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[DFT Inc](http://www.specagent.com/Lookup?uid=123457115399).

[Val-Matic Valve & Manufacturing Corp](http://www.specagent.com/Lookup?uid=123457115405).

Approved equivalent.

Description:

Standard: MSS SP-125.

CWP Rating: 200 psig.

Body Material: ASTM A126, gray iron.

Style: Globe, spring loaded.

Ends: Flanged.

Seat: [**EPDM**] [**or**] [**NBR**] <**Insert material**>.

* + - * 1. Iron, Compact-Wafer, Center-Guided Check Valves with Resilient Seat, Class 150:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9539) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[APCO DeZurik Valve Co](http://www.specagent.com/Lookup?uid=123457115409).

[Val-Matic Valve & Manufacturing Corp](http://www.specagent.com/Lookup?uid=123457115411).

Approved equivalent.

Description:

Standard: MSS SP-125.

CWP Rating: 300 psig.

Body Material: ASTM A395 or ASTM A536, ductile iron.

Style: Compact wafer, spring loaded.

Seat: [**EPDM**] [**or**] [**NBR**] <**Insert material**>.

* + - * 1. Iron, Globe, Center-Guided Check Valves with Resilient Seat, Class 150:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9540) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[DFT Inc](http://www.specagent.com/Lookup?uid=123457115415).

[Val-Matic Valve & Manufacturing Corp](http://www.specagent.com/Lookup?uid=123457115416).

Approved equivalent.

Description:

Standard: MSS SP-125.

CWP Rating: 300 psig.

Body Material: ASTM A395 or ASTM A536, ductile iron.

Style: Globe, spring loaded.

Ends: Flanged.

Seat: [**EPDM**] [**or**] [**NBR**] <**Insert material**>.

* + - * 1. Iron, Compact-Wafer, Center-Guided Check Valves with Resilient Seat, Class 250:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9541) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[APCO DeZurik Valve Co](http://www.specagent.com/Lookup?uid=123457115418).

[DFT Inc](http://www.specagent.com/Lookup?uid=123457115420).

[Val-Matic Valve & Manufacturing Corp](http://www.specagent.com/Lookup?uid=123457115426).

Approved equivalent.

Description:

Standard: MSS SP-125.

CWP Rating: 400 psig.

Body Material: ASTM A126, gray iron.

Style: Compact wafer, spring loaded.

Seat: [**EPDM**] [**or**] [**NBR**] <**Insert material**>.

* + - * 1. Iron Globe, Center-Guided Check Valves with Resilient Seat, Class 250:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9542) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[DFT Inc](http://www.specagent.com/Lookup?uid=123457115430).

[Val-Matic Valve & Manufacturing Corp](http://www.specagent.com/Lookup?uid=123457115434).

Approved equivalent.

Description:

Standard: MSS SP-125.

CWP Rating: 400 psig.

Body Material: ASTM A126, gray iron.

Style: Globe, spring loaded.

Ends: Flanged.

Seat: [**EPDM**] [**or**] [**NBR**] <**Insert material**>.

* + - * 1. Iron, Compact-Wafer, Center-Guided Check Valves with Resilient Seat, Class 300:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=9543) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[APCO DeZurik Valve Co](http://www.specagent.com/Lookup?uid=123457115436).

Approved equivalent.

Description:

Standard: MSS SP-125.

CWP Rating: 500 psig.

Body Material: ASTM A395 or ASTM A536, ductile iron.

Style: Compact wafer, spring loaded.

Seat: [**EPDM**] [**or**] [**NBR**] <**Insert material**>.

* + - * 1. Iron Globe, Center-Guided Check Valves with Resilient Seat, Class 300:

Description:

Standard: MSS SP-125.

CWP Rating: 500 psig.

Body Material: ASTM A395 or ASTM A536, ductile iron.

Style: Globe, spring loaded.

Ends: Flanged.

Seat: [**EPDM**] [**or**] [**NBR**] <**Insert material**>.

* + - 1. IRON, PLATE-TYPE CHECK VALVES

Retain one or more of 10 paragraphs in this article if iron, plate-type check valves are required. API 594 covers iron, plate-type check valves NPS 2 to NPS 60 (DN 50 to DN 1500). Valves specified in this article are from NPS 2-1/2 to NPS 12 (DN 65 to DN 300).

* + - * 1. Iron, Dual-Plate Check Valves with Metal Seat, Class 125:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=13362) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[APCO DeZurik Valve Co](http://www.specagent.com/Lookup?uid=123457115445).

[Flomatic Corporation](http://www.specagent.com/Lookup?uid=123457115443).

[Keckley Company](http://www.specagent.com/Lookup?uid=123457115447).

Approved equivalent.

Standard: API 594.

CWP Rating: 200 psig.

Body Design: Wafer, spring-loaded plates.

Body Material: ASTM A126, gray iron.

Seat: Bronze.

* + - * 1. Iron, Dual-Plate Check Valves with Metal Seat, Class 150:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=13365) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[APCO DeZurik Valve Co](http://www.specagent.com/Lookup?uid=123457115460).

Approved equivalent.

Standard: API 594.

CWP Rating: 300 psig.

Body Design: Wafer, spring-loaded plates.

Body Material: ASTM A395/A395M or ASTM A536, ductile iron.

Seat: Bronze.

* + - * 1. Iron, Dual-Plate Check Valves with Metal Seat, Class 250:

Standard: API 594.

CWP Rating: 400 psig.

Body Design: Wafer, spring-loaded plates.

Body Material: ASTM A126, gray iron.

Seat: Bronze.

* + - * 1. Iron, Dual-Plate Check Valves with Metal Seat, Class 300:

Standard: API 594.

CWP Rating: 500 psig.

Body Design: Wafer, spring-loaded plates.

Body Material: ASTM A395 or ASTM A536, ductile iron.

Seat: Bronze.

* + - * 1. Iron, Single-Plate Check Valves with Resilient Seat, Class 125:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=13363) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Keckley Company](http://www.specagent.com/Lookup?uid=123457115450).

Approved equivalent.

Standard: API 594.

CWP Rating: 200 psig.

Body Design: Wafer, spring-loaded plate.

Body Material: ASTM A126, gray iron.

Seat: [**EPDM**] [**or**] [**NBR**] <**Insert material**>.

* + - * 1. Iron, Dual-Plate Check Valves with Resilient Seat, Class 125:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=13364) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Keckley Company](http://www.specagent.com/Lookup?uid=123457115458).

[Sure Flow Equipment Inc](http://www.specagent.com/Lookup?uid=123457115453).

Approved equivalent.

Standard: API 594.

CWP Rating: 200 psig.

Body Design: Wafer, spring-loaded plates.

Body Material: ASTM A126, gray iron.

Seat: [**EPDM**] [**or**] [**NBR**] <**Insert material**>.

* + - * 1. Iron, Dual-Plate Check Valves with Resilient Seat, Class 150:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=13368) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[APCO DeZurik Valve Co](http://www.specagent.com/Lookup?uid=123457115470).

[Bray International, Inc](http://www.specagent.com/Lookup?uid=123457213196).

[Keckley Company](http://www.specagent.com/Lookup?uid=123457213197).

[Stockham; a Crane Co. brand](http://www.specagent.com/Lookup?uid=123457213198).

[Sure Flow Equipment Inc](http://www.specagent.com/Lookup?uid=123457213199).

Approved equivalent.

Standard: API 594.

CWP Rating: 300 psig.

Body Design: Wafer, spring-loaded plates.

Body Material: ASTM A395 or ASTM A536, ductile iron.

Seat: [**EPDM**] [**or**] [**NBR**] <**Insert material**>.

* + - * 1. Iron, Wafer, Single-Plate Check Valves with Resilient Seat, Class 250:

Standard: API 594.

CWP Rating: 400 psig.

Body Design: Wafer, spring-loaded plate.

Body Material: ASTM A126, gray iron.

Seat: [**EPDM**] [**or**] [**NBR**] <**Insert material**>.

* + - * 1. Iron, Dual-Plate Check Valves with Resilient Seat, Class 250:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=13370) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Sure Flow Equipment Inc](http://www.specagent.com/Lookup?uid=123457115475).

Approved equivalent.

Standard: API 594.

CWP Rating: 400 psig.

Body Design: Wafer, spring-loaded plates.

Body Material: ASTM A126, gray iron.

Seat: [**EPDM**] [**or**] [**NBR**] <**Insert material**>.

* + - * 1. Iron, Dual-Plate Check Valves with Resilient Seat, Class 300:

Standard: API 594.

CWP Rating: 500 psig.

Body Design: Wafer, spring-loaded plates.

Body Material: ASTM A395 or ASTM A536, ductile iron.

Seat: [**EPDM**] [**or**] [**NBR**] <**Insert material**>.

1. EXECUTION
	* + 1. EXAMINATION
				1. Examine valve interior for cleanliness, freedom from foreign matter, and corrosion. Remove special packing materials, such as blocks, used to prevent disc movement during shipping and handling.
				2. Operate valves in positions from fully open to fully closed. Examine guides and seats made accessible by such operations.
				3. Examine threads on valve and mating pipe for form and cleanliness.
				4. Examine mating flange faces for conditions that might cause leakage. Check bolting for proper size, length, and material. Verify that gasket is of proper size, that its material composition is suitable for service, and that it is free from defects and damage.
				5. Do not attempt to repair defective valves; replace with new valves.
			2. VALVE INSTALLATION
				1. Install valves with unions or flanges at each piece of equipment arranged to allow service, maintenance, and equipment removal without system shutdown.
				2. Locate valves for easy access and provide separate support where necessary.
				3. Install valves in horizontal piping with stem at or above center of pipe.
				4. Install valves in position to allow full stem movement.
				5. Check Valves: Install check valves for proper direction of flow.

Revise check valve installation requirements to suit Project; delete those not required.

Swing Check Valves: In horizontal position with hinge pin level.

[**Center-Guided**] [**and**] [**Plate-Type**] Check Valves: In horizontal or vertical position, between flanges.

Lift Check Valves: With stem upright and plumb.

* + - * 1. Install valve tags.
			1. ADJUSTING
				1. Adjust or replace valve packing after piping systems have been tested and put into service but before final adjusting and balancing. Replace valves if persistent leaking occurs.
			2. GENERAL REQUIREMENTS FOR VALVE APPLICATIONS

The Section Text is arranged to provide bronze valves in NPS 2 (DN 50) and smaller and iron valves from NPS 2-1/2 to NPS 12 (DN 65 to DN 300).

Caution: Verify that valve classes and pressure-temperature ratings are adequate for system fluid. Repeat each category listing if necessary and insert required pressure range for each listing. Indicate location of each different pressure system on Drawings.

Retain and revise valve applications in paragraphs and schedules below. Coordinate with valves specified in Part 2.

* + - * 1. If valve applications are not indicated, use the following:

Pump-Discharge Check Valves:

2 inch and Smaller: Bronze swing check valves with [**bronze**] [**or**] [**nonmetallic**] disc.

2-1/2 inch and Larger for Domestic Water: Iron swing check valves with lever and weight or spring; or iron, center-guided, [**metal-seat**] [**or**] [**resilient-seat**] check valves.

2-1/2 inch and Larger for Sanitary Waste and Storm Drainage: Iron swing check valves with lever and weight or spring.

* + - * 1. If valves with specified CWP ratings are unavailable, the same types of valves with higher CWP ratings may be substituted.
				2. End Connections:

For Copper Tubing, 2 inch and Smaller: Threaded or soldered or press-ends.

For Copper Tubing, 2-1/2 inch to 4 inch: Flanged or threaded.

For Copper Tubing, 5 inch and Larger: Flanged.

For Steel Piping, 2 inch and Smaller: Threaded.

For Steel Piping, 2-1/2 inch to 4 inch: Flanged or threaded.

For Steel Piping, 5 inch and Larger: Flanged.

For Grooved-End [**Copper Tubing**] [**and**] [**Steel Piping**]: Grooved.

* + - 1. LOW-PRESSURE, COMPRESSED-AIR VALVE SCHEDULE (150 PSIG OR LESS)
				1. Pipe 2 inch and Smaller:

Vertical, Upflow Applications Only: Bronze lift check valves with [**bronze**] [**nonmetallic**] disc, Class 125, with [**soldered**] [**or**] [**threaded**] end connections.

Horizontal and Vertical Applications: Bronze swing check valves with [**bronze**] [**nonmetallic**] disc, [**Class 125**] [**Class 150**], with [**soldered**] [**or**] [**threaded**] end connections.

* + - * 1. Pipe 2-1/2 inch and Larger:

Retain one or more of subparagraphs below and indicate location of each type on Drawings.

Iron swing check valves with[**metal**] [**nonmetallic-to-metal**]seats, [**Class 125**] [**Class 250**], with [**threaded**] [**or**] [**flanged**] end connections.

Iron, grooved-end swing check valves, 300 CWP.

Iron, dual-plate check valves with [**metal**] [**resilient**] seat, [**Class 125**] [**Class 150**] [**Class 250**] [**Class 300**], with [**threaded**] [**or**] [**flanged**] end connections.

Iron, single-plate check valves with resilient seat, [**Class 125**] [**Class 250**], with [**threaded**] [**or**] [**flanged**] end connections.

* + - 1. HIGH-PRESSURE, COMPRESSED-AIR VALVE SCHEDULE (150 TO 200 PSIG)
				1. Pipe 2 inch and Smaller:

Vertical, Upflow Applications Only: Bronze lift check valves with [**bronze**] [**nonmetallic**] disc, Class 125, with [**soldered**] [**or**] [**threaded**] end connections.

Horizontal and Vertical Applications: Bronze swing check valves with [**bronze**] [**nonmetallic**] disc, [**Class 125**] [**Class 150**], with [**soldered**] [**or**] [**threaded**] end connections.

* + - * 1. Pipe 2-1/2 inch and Larger:

Retain one or more of subparagraphs below and indicate location of each type on Drawings.

Iron swing check valves with [**metal**] [**nonmetallic-to-metal**] seats, [**Class 125**] [**Class 250**], with [**threaded**] [**or**] [**flanged**] end connections.

Iron, grooved-end swing check valves, 300 CWP with [**threaded**] [**or**] [**flanged**] end connections.

Iron, dual-plate check valves with [**metal**] [**resilient**] seat, [**Class 125**] [**Class 150**] [**Class 250**] [**Class 300**], with [**threaded**] [**or**] [**flanged**] end connections.

Iron, single-plate check valves with resilient seat, [**Class 125**] [**Class 250**], with [**threaded**] [**or**] [**flanged**] end connections.

* + - 1. DOMESTIC HOT- AND COLD-WATER VALVE SCHEDULE
				1. Pipe 2 inch and Smaller:

Retain first or second subparagraph below.

Bronze swing check valves with [**bronze**] [**nonmetallic**] disc, [**Class 125**] [**Class 150**], with [**soldered**] [**or**] [**threaded**] end connections.

Bronze swing check valves with press-end connections.

* + - * 1. Pipe 2-1/2 inch and Larger:

Retain one or more of subparagraphs below and indicate location of each type on Drawings.

Iron swing check valves with [**metal**] [**nonmetallic-to-metal**] seats, [**Class 125**] [**Class 250**], with [**threaded**] [**or**] [**flanged**] end connections.

Iron swing check valves with closure control lever and [**spring**] [**weight**], Class 125, with [**threaded**] [**or**] [**flanged**] end connections.

Iron, grooved-end swing check valves, 300 CWP.

Iron, center-guided check valves with compact wafer, [**Class 125**] [**Class 150**] [**Class 250**] [**Class 300**].

Iron, center-guided check valves with [**globe**], [**metal**] [**resilient**] seat, [**Class 125**] [**Class 150**] [**Class 250**] [**Class 300**], with [**threaded**] [**or**] [**flanged**] end connections.

Iron, dual-plate check valves with [**metal**] [**resilient**] seat, [**Class 125**] [**Class 150**] [**Class 250**] [**Class 300**], with [**threaded**] [**or**] [**flanged**] end connections.

Iron, single-plate check valves with resilient seat, [**Class 125**] [**Class 250**], with [**threaded**] [**or**] [**flanged**] end connections.

END OF SECTION 220523.14