

## 2"- 12" DD PLUS CHECK VALVE Stayflow Specification

### 1 Scope

- 1.1 This specification covers the design, manufacture, and testing of 2 in. (50 mm) through 12 in. (300 mm) Dual Disc Check Valves suitable for pressures up to 250 psig (1725 kPa) water service.  
1.2 The Check Valve shall be of the dual disc, wafer style with torsion spring induced closure.

### 2 Standards, Approvals and Verification

- 2.1 The valves shall be designed, manufactured and tested in accordance with American Water Works Association Standard ANSI/AWWA C518.  
2.2 The valves for use in fire protection systems shall be Underwriters Laboratories listed and Factory Mutual approved in sizes 2 1/2"-12".  
2.3 The valves shall be certified to be Lead-Free in accordance with NSF/ANSI 61, Annex G.  
2.4 Manufacturer shall have a quality management system that is certified to ISO 9001 by an accredited, certifying body.

### 3 Connections

- 3.1 Wafer style valves shall be provided in sizes 2 in (50 mm) through 12 in. (300 mm) for installation between ANSI B16.1 Class 125 iron flanges, or between ISO 7005-2 PN10 or PN16 flanges. Grooved end valves shall be provided in (2" 50mm) through 12" (300mm) for installation on pipe with cut grooves per ANSI/AWWA C606 for steel IPS pipe.

### 4 Design

- 4.1 The body shall be of one piece construction incorporating a vulcanized synthetic seal.  
4.2 Seal design shall include a raised sealing bead for positive seating at both high and low pressures. The disc shall fully overlap the synthetic seal, preventing pressure indentations.  
4.3 Opening and closing of the valve shall utilize a lift and pivot action to prevent seal wear and ensure long seal life.  
4.4 Disc stabilization in the full open position shall be provided by the use of a stop pin.  
4.5 The stop and pivot pins shall be stabilized by the use of synthetic spheres to prevent wear due to vibration during operating conditions. The design shall incorporate a raised seat and 1/2" body wall to disc clearance to ensure proper operation after long periods of inactivity and potential corrosion buildup.  
4.6 Cv flow coefficients shall be equal to or greater than specified below and verified by an independent testing laboratory.

VALVE SIZE		Cv	
		WAFER	GROOVED
2 in.	(50 mm)	76	77
2.5 in.	(65 mm)	161	129
3 in.	(80 mm)	224	209
4 in.	(100 mm)	400	358
5 in.	(125 mm)	648	573
6 in.	(150 mm)	1060	898
8 in.	(200 mm)	1890	1740
10 in.	(250 mm)	3340	3180
12 in.	(300 mm)	5270	4950

- 4.6 Closure shall be assisted with a torsion spring to provide a cracking pressure of 0.25 psig.

### 5 Materials

- 5.1 The valve body shall be constructed of ASTM A536 Grade 65-45-12 ductile iron.  
5.2 The disc shall be constructed of ASTM B584, Alloy C87600 (2"-12") cast bronze. The pivot pins and stop pins shall be Type 316 stainless steel.  
5.3 The torsion spring shall be ASTM A313 Type 316 stainless steel.  
5.4 The seal shall be Buna-N per ASTM D2000-BG.

### 6 Options

- 6.1 Air Service Spring (series 8900W)  
6.2 Valve interiors and exteriors shall be coated with an NSF/ANSI 61 certified fusion bonded epoxy in accordance with AWWA C550 when specified.

### 7 Manufacture

- 7.1 The valves shall be hydrostatically tested at 2 times their rated cold working pressure. A seat closure test at 2 times the valve rating shall be conducted to demonstrate zero leakage. Additional tests shall be conducted per AWWA, ANSI, MSS or API standards when specified. When requested, the manufacturer shall provide test certificates, dimensional drawings, parts list drawings, and operation and maintenance manuals.  
7.2 The exterior of the valve shall be coated with a universal alkyd primer.  
7.3 DD Plus Check Valves shall be Series #8800W (wafer style) and Series #8800G (grooved end) as manufactured by Stayflow Valve & Mfg. Corporation, Elmhurst, IL. USA or approved equal.

Revised 10-15-15

DD PLUS CHECK VALVE SPECIFICATION

DATE 6-6-06



VALVE AND MANUFACTURING CORP.

DRWG. NO.

VM-8802-S

# 14"- 66" DD PLUS CHECK VALVE Stayflow Specification

## 1 Scope

- 1.1 This specification covers the design, manufacture, and testing of 14 in. (350 mm) through 66 in. (1650 mm) DD Plus Check Valves suitable for pressures up to 500 psig (3450 kPa) water service.  
1.2 The check valve shall be of the dual disc type, wafer style with torsion spring induced closure.

## 2 Standards, Approvals and Verification

- 2.1 14 in. through 16 in. valves used in fire protection systems shall be Factory Mutual (FM) approved.  
2.2 The valves shall be certified to be Lead-Free in accordance with NSF/ANSI 61, Annex G.  
2.3 Manufacturer shall have a quality management system that is certified to ISO 9001 by an accredited, certifying body.

## 3 Connections

- 3.1 Wafer style valves shall be provided in sizes 14 in (350 mm) through 66 in. (1650 mm) for installation between ANSI B16.1 Class 125 or Class 250 iron flanges.

## 4 Design

- 4.1 The body shall be of one piece construction incorporating a vulcanized synthetic seal.  
4.2 Seal design shall include a raised sealing bead for positive seating at both high and low pressures. The disc shall fully overlap the synthetic seal, preventing pressure indentations.  
4.3 Opening and closing of the valve shall utilize a lift and pivot action to prevent seal wear and ensure long seal life.  
4.4 The stop and pivot pins shall be stabilized by the use of synthetic spheres to prevent wear due to vibration during operating conditions.  
4.5 Cv flow coefficients shall be equal to or greater than specified below and verified by an independent testing laboratory.

<u>VALVE SIZE</u>	<u>Cv</u>	<u>VALVE SIZE</u>	<u>Cv</u>
14 in. (350 mm)	5200	36 in. (900 mm)	50000
16 in. (400 mm)	7200	42 in. (1050 mm)	72000
18 in. (450 mm)	9400	48 in. (1200 mm)	97000
20 in. (500 mm)	12000	54 in. (1400 mm)	130000
24 in. (600 mm)	18500	60 in. (1500 mm)	180000
30 in. (750 mm)	33000	66 in. (1650 mm)	180,000

- 4.6 Closure shall be assisted with a torsion spring to provide a cracking pressure of 0.25 psig.

## 5 Materials

- 5.1 The valve body shall be constructed of ASTM A126 Class B cast iron for Class 125 and Class 250 valves. Optional body materials include ASTM A536 Grade 65-45-12 ductile iron.  
5.2 The disc shall be constructed of ASTM B148, Alloy C95200 cast aluminum bronze. Optional disc materials include ASTM A536 Grade 65-45-12 with electroless nickel plating and ASTM A351 Grade CF8M stainless steel. The disc pins and stop pins shall be Type 316 stainless steel.  
5.3 The torsion spring shall be ASTM A313 Type 316 stainless steel up to 16 in. (400 mm) sizes and ASTM A313 Type 17-7 PH on 18 in. (450 mm) and larger sizes.  
5.4 The seal shall be Buna-N per ASTM D2000-BG or Viton per D2000-HK.

## 6 Options

- 6.1 End connections shall be lug wafer with threaded flange lugs or full diameter threaded flanges when specified for end of line service.  
6.2 Air service spring (Series 8900).  
6.3 Valve interiors and exteriors shall be coated with an NSF/ANSI 61 certified fusion bonded epoxy in accordance with AWWA C550 when specified.

## 7 Manufacture

- 7.1 The valves shall be hydrostatically tested at 1.5 times their rated cold working pressure. A seat closure test at the valve rating shall be conducted to demonstrate zero leakage. Additional tests shall be conducted per AWWA, ANSI, MSS or API standards when specified. When requested, the manufacturer shall provide test certificates, dimensional drawings, parts list drawings, and operation and maintenance manuals.  
7.2 The exterior of the valve shall be coated with a universal alkyd primer.  
7.3 DD Plus Check Valves shall be Series #8800 (Class 125), 8700 (Class 250), or 8800L (Lug Wafer) as manufactured by Stayflow Valve & Mfg. Corporation, Chicago, IL, USA or approved equal.

Revised 7-5-11

14"-66" DD PLUS CHECK VALVE SPECIFICATON

DATE 6-6-06



VALVE AND MANUFACTURING CORP.

DRWG. NO.

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