

Water Technology Resources

9201 E Bloomington Freeway Suite Z

Bloomington, MN 55420

Phone: 952-641-9004 Fax: 952-885-9173

1/17/19

Bid Specifications Jefferson Parish, LA

Bid # 50-5000125291

Rubber Flapper Check Valves (45°)

Specification Check List

	<u>Yes</u>	<u>No</u>
<u>1.0 General</u>		
A. One (1) WTR 24" Model FDCV24, provided with a Flange Face to Face dimension of 48"	X	
Rubber Flapper Check Valves w/Accessory Items		
Delivery within 8 weeks from date of contract award		
<u>1.1 Quality Assurance</u>		
Descriptive literature and documentation contract is awarded and is included with our bid.	X	
<u>2.0 Product</u>		
A. 250 PSI Pressure Rating – Flanged Class 125/250 End Connection Full Waterway Design 45 Degree Valve Seat Angle	X	
B. Removable Cover to allow removal of Disc without removing Valve from Pipeline. Cover is dome shaped and includes a plugged opening to permit installation of a visual indication of the disc position	X	

C. The Flexible Disc shall be one-piece precision molded with alloy steel and nylon reinforcement and an integral O-Ring style seat to obtain drop tight seating at low pressure.	X	
D. The Spring Assist shall be one – piece construction, formed with a large radius, to allow smooth movement and to provide rapid valve closure.	X	
The Spring Assist shall be secured to the cover using Type 316 Stainless Steel Screws.	X	
The Disc and Spring shall be field replaceable without having to remove the Valve from the pipeline – and/or the need for special tools	X	
<u>2.1 Materials of Construction</u>		
A. Valve Body and Cover – Ductile Iron – ASTM A536 Grade 65-45-12	X	
B. Flexible Disc – Buna-N (NBR Rubber)	X	
C. Spring Assist – 316 Stainless Steel	X	
D. The Valve Body and Cover shall be factory coated internally and externally with 12 – 16 mils of fusion bonded epoxy (FBE) and the coating shall be NSF61 and AWWA C500 for contact with drinking water.	X	

The WTR 45° Flex Flapper Disc Valve offered is in complete accordance with the specifications. No exceptions are needed and none are taken.

Cordially,

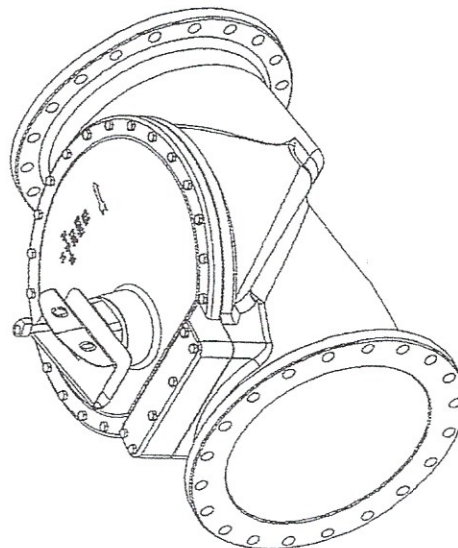
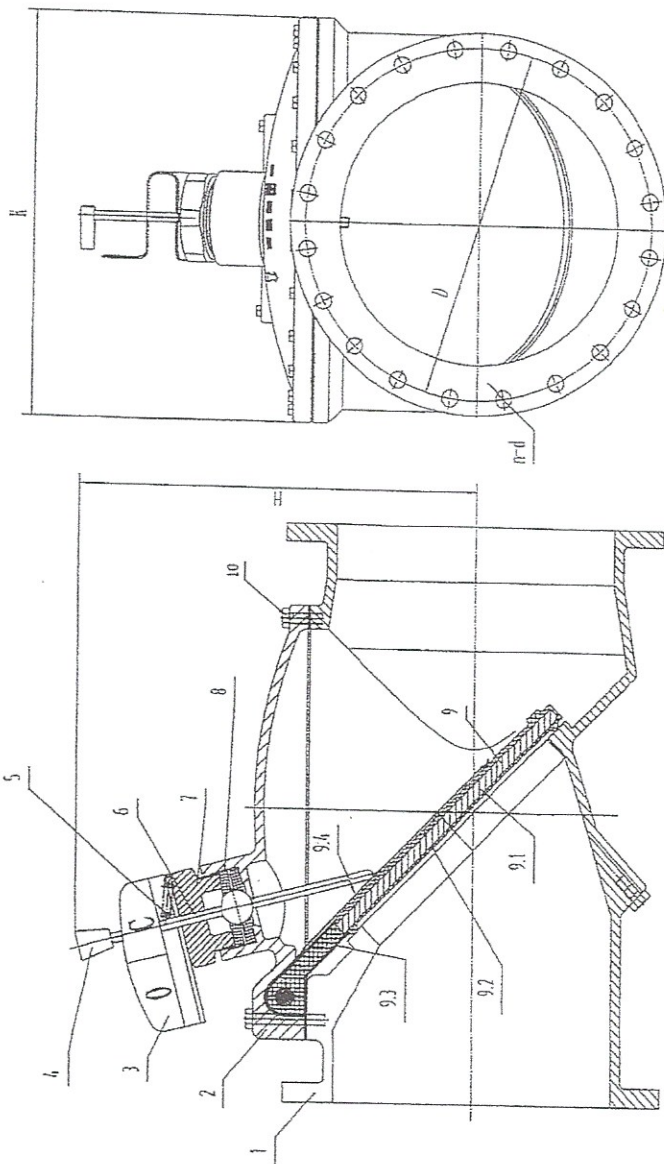
Matt Waldor, Vice President

Water Technology Resources

Size	L	H	K	D	D ₁	n-d
12"	21.5"	17.2"	24.6"	19"	17"	12-1"
14"	31"	18.9"	24.9"	21"	18 3/4"	12-1 1/8"
16"	36"	19.3"	25.4"	23 3/8"	21 1/2"	16-1 1/8"
18"	40"	20.4"	29.2"	25"	22 3/4"	16-1 1/4"
20"	40"	21.7"	31.7"	27 1/2"	25"	20-1 1/4"
24"	48"	24.6"	36.4"	32"	29 1/4"	20-1 3/8"
30"	56"	27.7"	43.7"	38 3/4"	36"	28-1 3/8"
36"	63"	32.4"	52.6"	46"	42 3/4"	32-1 3/8"
42"	70"	39.6"	60.2"	53"	49 1/4"	36-1 3/8"
48"	76"	43.5"	67.2"	59 1/2"	56"	44-1 3/8"

Dimensions in inches

1. Flange conforms to ANSI B16.1 class 125
2. Work pressure: ~~150 PSI~~ **250 PSI**
3. Suitable medium: water and neutral liquid
4. Working temperature: EPDM ≤ 120°C



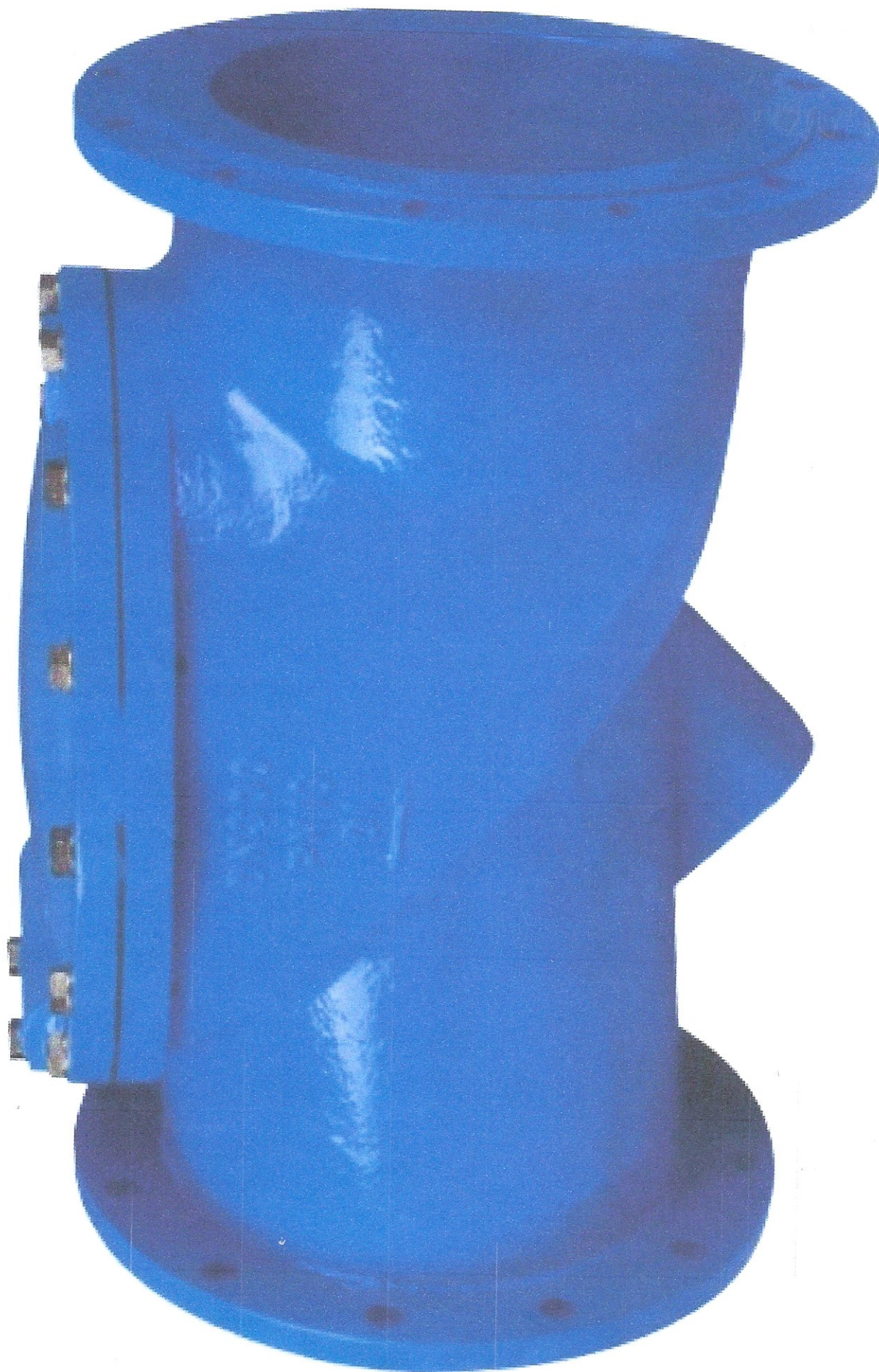
10	Bolt	SS304
9.4	Spring	SS316
9.3	Rubber Hinge	EPDM strength nylon
9.2	Rubber coated	EPDM
9.1	Disc core	Carbon steel
9	Disc	PTFE
8	Sealing rings	Brass
7	Gland	SS304
6	Rod of indicator	SS 17-4PH
5	Spring	Nylon
4	Indicator	SS304
3	Panel	DI 65-45-12
2	Donnet	DI 65-45-12
1	body	DI 65-45-12
NO	Parts name	Material
15° flex disc check valve size 12" to 48"		
APPROVED	DESIGNED	SIGNATURE
CHECKED	DESIGNED	SIGNATURE
DATE	DATE	DATE
REV02	Aug 13, 2015	tech

Water Technology Resources

WTR Valves

Flexible Disc Check Valve





45° Flap Disc Check Valve

WATER TECHNOLOGY RESOURCES – WTR VALVES

April, 2018

45° Flexible Disc Swing Check Valves

WTR Series 200 AWWA C-508

Flexible Disc Swing Check Valves are designed for tough pumping applications where performance, reliability, and minimal maintenance are of utmost importance. This design has particularly good performance in applications having high discharge pressures in which reverse flows could cause excessive surging and severe slamming of the Disc resulting in water hammer.

~~These Valves meet or exceed AWWA C508 Standards.~~

The Valve is designed with a 45° angle valve seat and a short disc stroke of 35° to achieve rapid closure, and positive seating at high or low pressures. This reduced closing time results in minimizing the impact of flow reversal and resultant slamming and water hammer.

The Valve design provides positive, tight seating and is provided with a smooth, contoured, ~~streamline design providing 100% unrestricted full flow with minimal head loss, while allowing~~ a clear passageway for large size solids.

The 45° Valve seat angle design provides full flow capability equal to the nominal Valve inlet/outlet size. A 4" Valve is capable of passing a 3" diameter sphere. A plugged opening in the top access cover allows for clean water flush.

~~Design simplicity, efficiency, and reliability, along with high quality, are the keys to superior~~ performance and long service life of the Swing Flex Valve.

The Valve can be back-flushed through an optional actuator device.

Standard Materials of Construction:

~~Body and Cover – Ductile Iron~~

Disc – Ductile Iron with NBR or EPDM Encapsulation/Optional Materials Available

Coating – Fusion Bonded Epoxy Coated both Exterior and Interior - AWWA C550/NSF61

The Valve Disc is one piece, constructed of ductile iron, fully encapsulated in an elastomer rubber and provided with a strong nylon reinforcement.

9204 E. Bloomington Fwy. Suite Z Bloomington, MN 55420

PH: 952-641-9004 Fax: 952-885-9173 E-mail: contact@wtrvalves.com

WATER TECHNOLOGY RESOURCES – WTR VALVES

The Flexible Disc Swing Check Valve has advantages over conventional Swing Checks which have a 90° stroke and which are typically fitted with an outside weight and lever or spring mechanism to assist in closing the Disc. However, the 90° design takes longer for the disc to close. The 90° design also involves increased head loss, additional maintenance, and reduced service life. The closing action pulls the disc down into the flow path to close off the flow and tends to create turbulence causing it to oscillate in the flow, subjecting the bearings, shaft and shaft seal to additional stress and strain.

The Flexible Disc Swing Check Valve design reduces the impact of reverse flow by achieving a rapid close of approximately one half the time of the 90° design. Quick closing action is assisted by an optional Stainless Steel Spring Assist.

Options include: Backflow Actuator, Stainless Steel Spring Assist, Valve Disc Position Indicator, Synthetic Liners, Different Alloy Materials of Construction, and Limit Switch for remote signal.

Flexible Disc Swing Check Valves are designed, manufactured and tested in accordance with AWWA C-508 Standards. Dimensions and face to face lay lengths match AWWA Full Flow Check Valve Standards, i.e. 6" = 14" FF

45° Flexible Disc Valves are WTR Series 200.



WATER TECHNOLOGY RESOURCES - WTR VALVES

April, 2018

45° Flexible Disc Swing Check Valve – AWWA C508 Standards

Design

Size Range 2" – 48"

Disc Stroke travel of 35°

Valve seats @ 45° angle

Non-Clog Design

Quick, Quiet, Disc Closure

Domed Access Port

AWWA C508 – FI/FI Face Dimensions

Effective Performance Against Reverse Flow – Water Hammer and Disc Slam

Valve Features

Meets or Exceeds AWWA C508 Design, Materials of Construction, and Testing Standards and other Requirements

Full 100% Unobstructed Flow equal to Nominal Inlet/Outlet Pipe Sizes – at all areas through the Valve

Simple Operation - Proven Design

Horizontal or Vertical Installation

Flanged End Connections – ANSI B16.1 Class 150/300

Effective against Reverse Flow

Non Slam Performance

Drop tight, Positive Shut-Off Seating

Easy In Line Servicing

Low Friction Head Loss

Optional Higher Pressures – 250 psi Working Pressure – 500 psi Test Pressure

Backflow/Backflush Capability

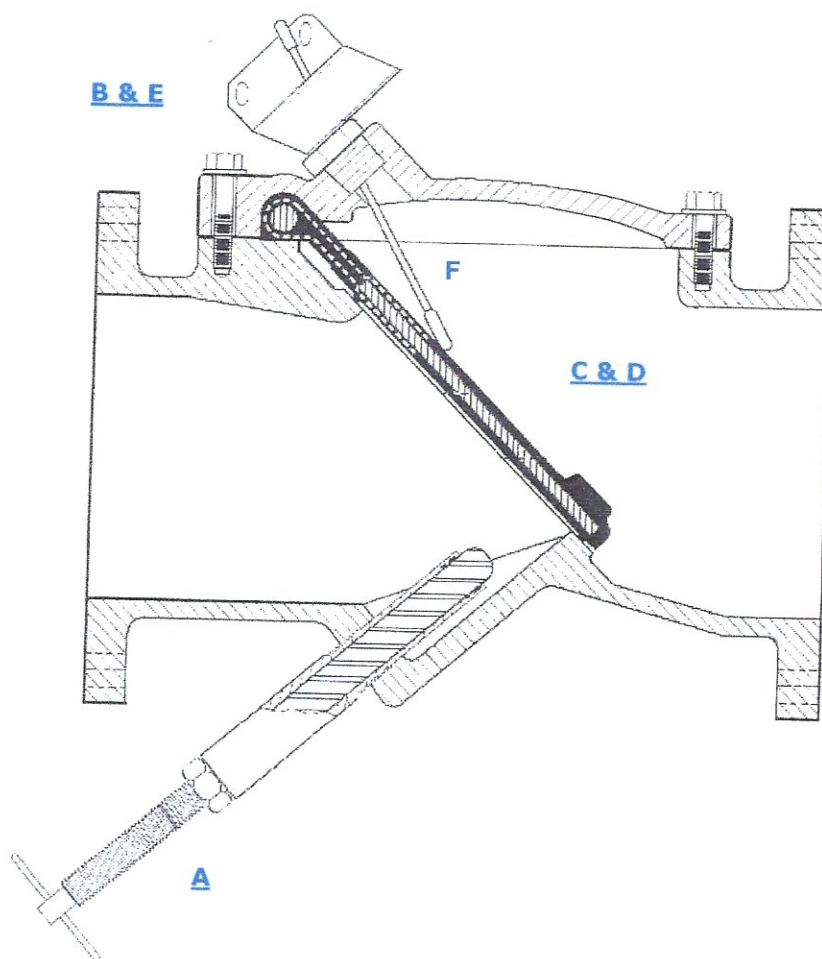
Valve Seat @ 45° Angle – Short 35° Disc Stroke

WATER TECHNOLOGY RESOURCES – WTR VALVES

January, 2008

AWWA C508

45° SWING FLEX RUBBER FLAPPER CHECK VALVES

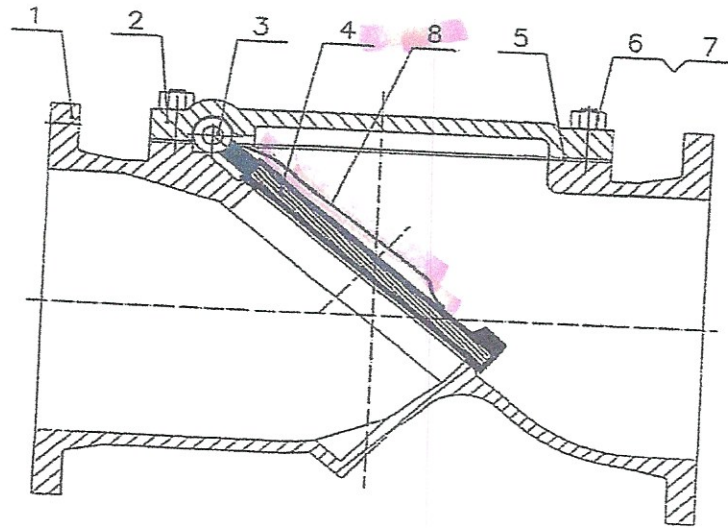


OPTIONAL ITEMS AVAILABLE

- A) Backflow Actuator – Positive Backflush
- B) Valve Disc Position Indicator
- C) Synthetic Liners
- D) Limit Switch for Remote Signal
- E) Other Alloy Construction
- F) Acceleration Spring Assist Disc Close

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Materials of Construction

Part	Description	Material
1	Body	Ductile Iron
2	Bonnet	Ductile Iron
3	Stem	Stainless Steel
4	Disc	Carbon Steel Encapsulated with EPDM or Neoprene
5	Gasket	NBR
6	Bolt	Stainless Steel
7	Nut	Stainless Steel
8	Disc Close - Spring Assist	Stainless Steel

Table 2. Valve Construction Materials

Maintenance

Due to the simplicity of the 45° Flex Disc Check Valve design, no scheduled maintenance or lubrication is necessary. The only moving part of the valve is the rubber encapsulated disc. The 45° Flex Disc Check Valve can be inspected internally and serviced without removal from the line following the steps for disassembly.

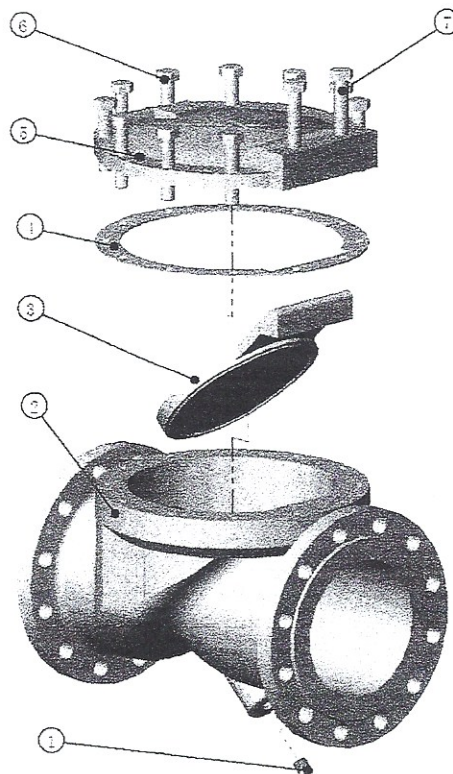
WATER TECHNOLOGY RESOURCES – WTR VALVES

January, 2014

Flexible Swing Disc Rubber Flapper Check Valve

Series 3100

Item	Component	Material	Specification
1	Plug	Malleable Iron	Commercial
2	Body	Ductile Iron	A536-65-45-12
3	Disc	DI+Elastomer coating	NBR / EPDM
4	Gasket	Elastomer	NBR / EPDM
5	Cover	Ductile Iron	A536-64-45-12
6	Bolts	Stainless Steel	316-SS
7	Bolts	Stainless Steel	316-SS
8	Spring Assist	Stainless Steel	316-SS



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