APCO CRF-100A RUBBER FLAPPER SWING CHECK VALVES

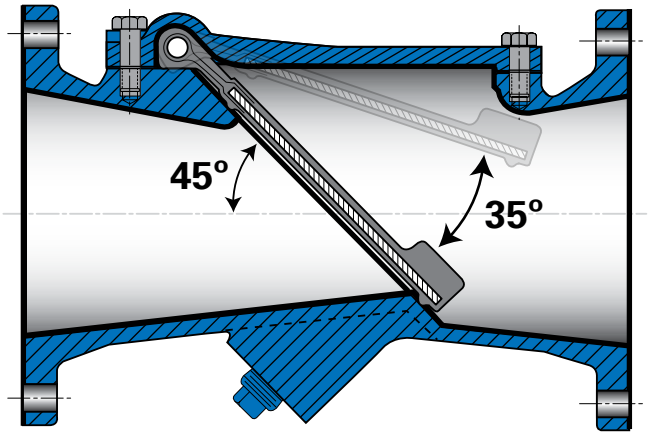
Design & Construction

APCO CRF-100A Rubber Flapper Swing Check Valves are uniquely simple in design but durable for use on a variety of applications. Available in sizes 2-24" (50-600mm), they are available in Ductile Iron with ASME 125/150 flanges and maximum pressure ratings up to 250 psi (1720 kPa). The APCO CRF-100A Rubber Flapper Swing Check Valve meets the latest revision of AWWA C508 for Swing Check Valves for Waterworks Service.

The combination of unique features of the Rubber Flapper Swing Check Valve makes it ideally suited for applications such as raw sewage, water systems, industrial wastes and chemical lines.

Unique 45° Angle Provides Non-Slam Properties

APCO CRF Rubber Flapper Swing Check Valves feature a unique, simple design with one moving part. The flapper does not swing from a hinge pin; it simply flexes open. The valve body seat is on an angle of 45° to the centerline of the pipe, permitting horizontal or vertical flow up installation. The unique 45° angle on the body seat gives the valve non-slamming properties. The flapper travels 35° from open to close, usually before column reversal can occur.

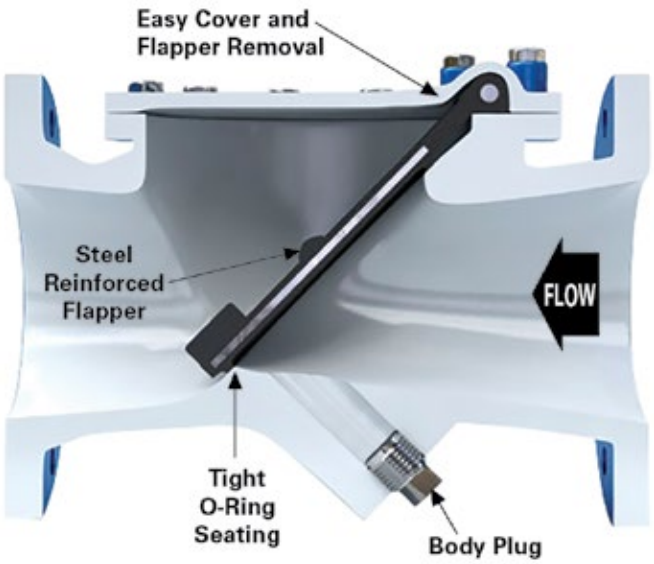


Unrestricted Full Flow Area

With the flapper fully open, there is a straight unobstructed flow passage, so all foreign matter is flushed away by the flowing medium. This eliminates clogging associated with other valve styles. Due to this unobstructed flow passage, the pressure drop is considerably lower through the APCO Rubber Flapper Check than through conventional swing check valves.

Precision Molded, Steel Reinforced Rubber Flapper Provides Bubble Tight Seating

The flapper is Acrylonitrile-Butadiene (NBR) and provides excellent abrasion resistant qualities. The flapper can also be compression molded from Terpolymer of Ethylene Propylene & A Diene (EPDM). A steel disc for strength and a steel bar are molded inside the flapper. A high strength fabric is integrally molded over the disc and bar to form a flexible joint. When the valve is assembled, the flapper is firmly clamped between body and cover. This feature eliminates problems of moving parts, shafts, pins, bearings, bushings, packing (as required in conventional check valves). The flapper design prevents jamming or sticking in the open position.



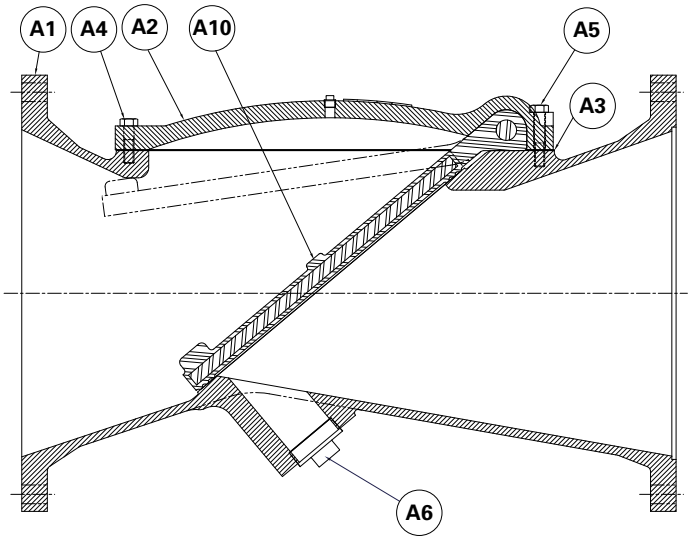
Rubber Flapper Provides Bubble-Tight Sealing

The o-ring seal molded into the disc face assures positive sealing, even at lower pressures.

No Regular Maintenance Required

With only three major parts: Body, Flapper and Cover, the CRF Rubber Flapper Check Valve requires relatively no maintenance. If maintenance should be required, the flapper can be replaced in a matter of minutes.

Materials of Construction



Item	Description	Material
A1	Body	Ductile Iron, ASTM A536, Grade 65-45-12
A2	Cover	Same as body material
A3	Gasket	Non-asbestos with butadiene rubber binder
A4	Cover Bolt	316 Stainless Steel, or Steel A449, Grade 5
A5	Cover Bolt	316 Stainless Steel, or Steel A449, Grade 5
A6	Body Pipe Plug	Iron, Malleable, ASTM A48, Class 40
A10	Rubber Flapper	Reinforced NBR, Acrylonitrile-Butadiene, Carbon Steel ASTM A36
		Reinforced EPDM, Terpolymer of Ethylene Propylene & A Diene, Carbon Steel ASTM A36

Valve Selection

Pressure Ratings

Body Style	Maximum Differential Cold Working Pressure
100A	250 psi (1720 kPa)

Note: Specify operating pressure when ordering

Temperature Ratings

Material	Temperature Range*
NBR, Acrylonitrile-Butadiene	-70 to 250° F (-57 to 121° C)
EPDM, Terpolymer of Ethylene Propylene & A Diene	-20 to 300° F (-29 to 150° C)

*Maximum operating temperature is a function of the materials used in the valve.

All valves are rated to a maximum temperature of at least 180° F (82° C).

Contact application engineering if the valve is required to operate above 180° F (82° C).

Applicable Standards

APCO CRF 100A Rubber Flapper Swing Check Valves are designed and/or tested to meet the following standards:	
AWWA C508	Swing-Check Valves for Waterworks Service 2 - 24" (50mm - 600mm) NPS Body Style 100A meets all requirements and full waterway dimensions.
ASME B16.1	Cast iron pipe flanges and flanged fittings. Conforms to related flange drilling dimensions.

Valve Weights

Valve Size	Body Style 100A
2" 50mm	25 11
2.5" 65mm	31 14
3" 80mm	39 18
4" 100mm	68 31
5" 125mm	Contact DeZURIK
6" 150mm	126 57
8" 200mm	236 107
10" 250mm	353 160
12" 300mm	485 220
14" 350mm	706 320
16" 400mm	1036 470
18" 450mm	1169 530
20" 500mm	1495 678
24" 600mm	2500 1134

Pounds
Kilograms

Ordering

To order, simply complete the valve order code from information shown.
An ordering example is shown for your reference.

Valve Style
Give valve style code as follows:

CRF = Rubber Flapper Swing Check Valves

Valve Size
Give valve size code as follows:

2	=	2"	(50mm)	10	=	10"	(250mm)
2.5	=	2.5"	(65mm)	12	=	12"	(300mm)
3	=	3"	(80mm)	14	=	14"	(350mm)
4	=	4"	(100mm)	16	=	16"	(400mm)
5	=	5"	(125mm)	18	=	18"	(450mm)
6	=	6"	(150mm)	20	=	20"	(500mm)
8	=	8"	(200mm)	24	=	24"	(600mm)

Body Style
Give body style code as follows:

100A = Rubber Flapper

End Connection
Give end connection code as follows:

F1 = Flanged ASME 125/150

Body Material
Give body material code as follows:

DI = Ductile Iron

Flapper Material
Give flapper material code as follows:

NBR = Acrylonitrile-Butadiene
EPDM = Terpolymer of Ethylene Propylene & A Diene

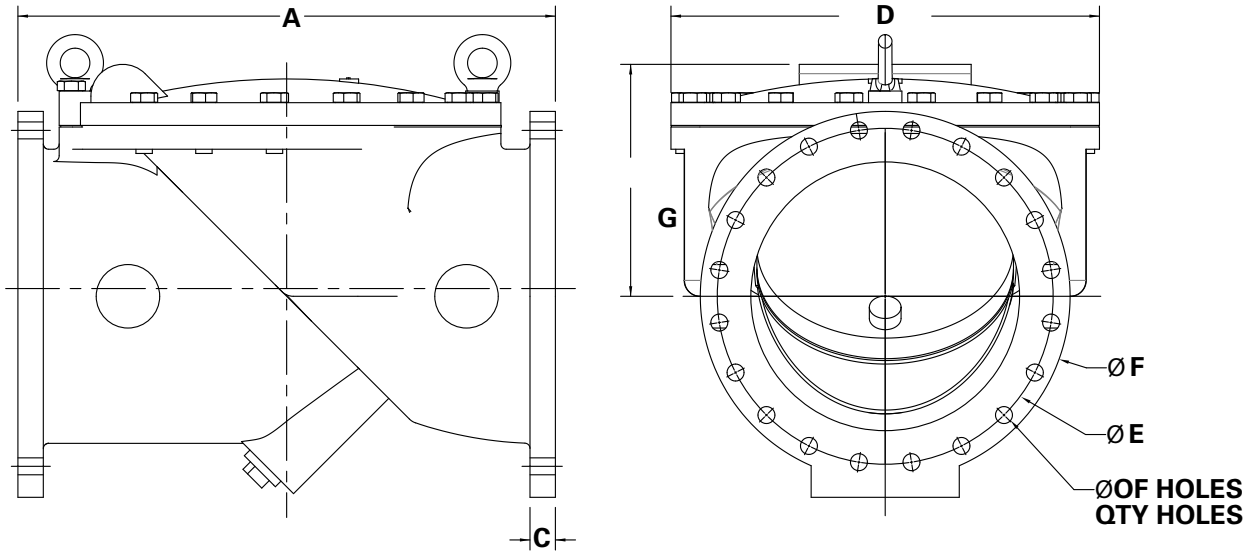
Options
Give options code as follows:

SB16 = 316 Stainless Steel Bolting

Ordering Example

CRF,10,100A,F1,DI,NBR*

Dimensions



Valve Size	A	C	D	E	F	G	No. of Flange Bolts	Bolt Hole Size
2"	8.00	0.63	5.12	4.75	6.00	3.39	4	0.75
50mm	203	16	130	121	152	86		19
2.5"	8.50	0.69	6.77	5.50	7.00	3.39	4	0.75
65mm	216	18	172	140	178	86		19
3"	9.50	0.75	7.40	6.00	7.50	5.12	4	0.75
80mm	241	19	188	152	191	130		19
4"	11.50	0.94	8.11	7.50	9.00	5.75	8	0.75
100mm	292	24	206	191	229	146		19
5"	13.75	0.94	10.08	8.50	10.00	5.25	8	0.75
125mm	349	24	256	216	254	133		19
6"	14.00	1.00	10.79	9.50	11.00	6.87	8	0.88
150mm	356	25	274	241	279	174		22
8"	19.50	1.13	14.09	11.75	13.50	7.60	8	0.88
200mm	495	29	358	298	343	193		22
10"	24.50	1.19	19.49	14.25	16.00	10.83	12	1.00
250mm	622	30	495	362	406	270		25
12"	27.50	1.25	21.26	17.00	19.00	11.78	12	1.00
300mm	699	32	540	432	483	299		25
14"	31.00	1.38	25.83	18.75	21.00	13.19	12	1.12
350mm	787	35	656	476	533	335		28
16"	36.00	1.44	25.20	21.25	23.50	15.55	16	1.12
400mm	914	37	640	540	597	395		28
18"	40.00	1.56	29.13	22.75	25.00	16.34	16	1.25
450mm	1016	40	740	578	635	415		32
20"	40.00	1.69	31.89	25.00	27.50	20.00	20	1.25
500mm	1016	43	810	635	699	508		32
24"	48.00	1.88	Contact	29.50	32.00	23.15	20	1.38
600mm	1219	48	DeZURIK	749	813	588		35

Inches
Millimeters

Sales and Service

For information about our worldwide locations, approvals, certifications and local representative:
Web Site: www.dezurik.com E-Mail: info@dezurik.com

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