

# 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.

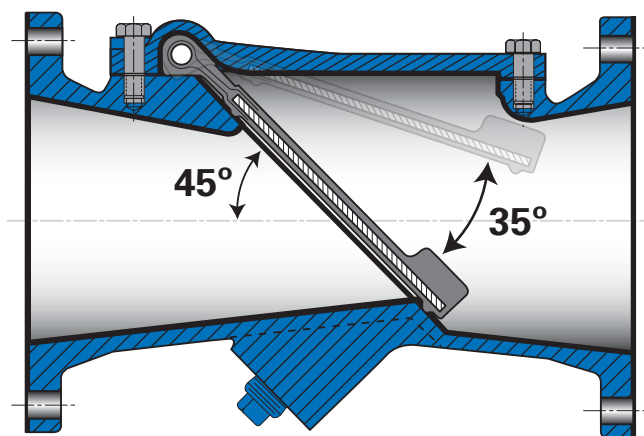
The combination of unique features of the Rubber Flapper Swing Check Valve makes it ideally suited for applications such as raw sewage, water systems, industrial wastes and chemical lines.

## 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.

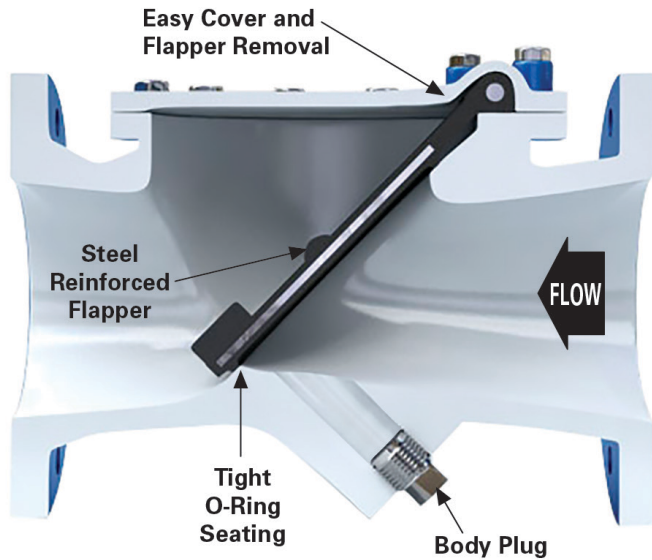
## Unrestricted Full Flow Area

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.

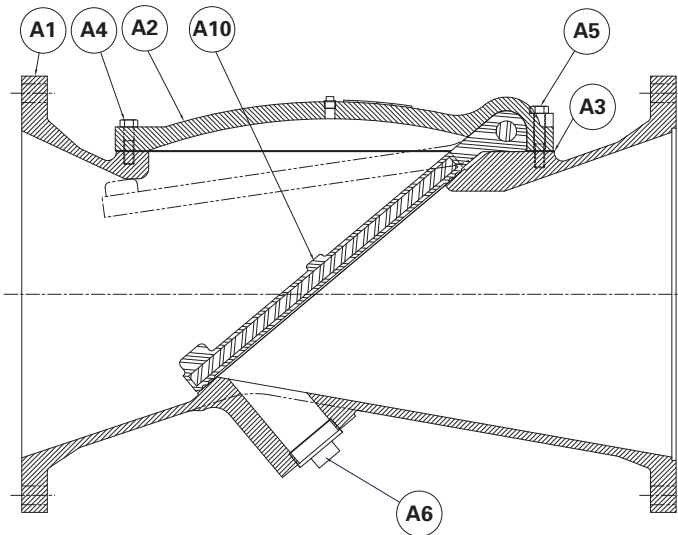
### Rubber Flapper Provides Bubble-Tight Sealing

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

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

Body Material	
Give body material code as follows:	
DI	= Ductile Iron

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)

Flapper Material	
Give flapper material code as follows:	
NBR	= Acrylonitrile-Butadiene
EPDM	= Terpolymer of Ethylene Propylene & A Diene

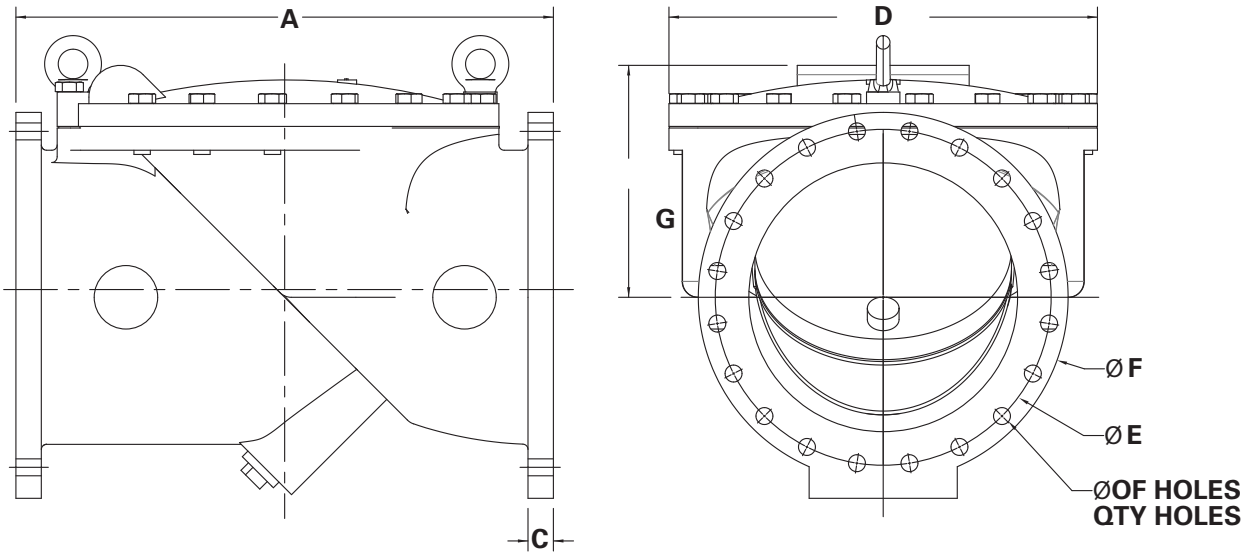
Body Style	
Give body style code as follows:	
100A	= Rubber Flapper

Options	
Give options code as follows:	
SB16	= 316 Stainless Steel Bolting

End Connection	
Give end connection code as follows:	
F1	= Flanged ASME 125/150

**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" 50mm	8.00 203	0.63 16	5.12 130	4.75 121	6.00 152	3.39 86	4	0.75 19
2.5" 65mm	8.50 216	0.69 18	6.77 172	5.50 140	7.00 178	3.39 86	4	0.75 19
3" 80mm	9.50 241	0.75 19	7.40 188	6.00 152	7.50 191	5.12 130	4	0.75 19
4" 100mm	11.50 292	0.94 24	8.11 206	7.50 191	9.00 229	5.75 146	8	0.75 19
5" 125mm	13.75 349	0.94 24	10.08 256	8.50 216	10.00 254	5.25 133	8	0.75 19
6" 150mm	14.00 356	1.00 25	10.79 274	9.50 241	11.00 279	6.87 174	8	0.88 22
8" 200mm	19.50 495	1.13 29	14.09 358	11.75 298	13.50 343	7.60 193	8	0.88 22
10" 250mm	24.50 622	1.19 30	19.49 495	14.25 362	16.00 406	10.83 270	12	1.00 25
12" 300mm	27.50 699	1.25 32	21.26 540	17.00 432	19.00 483	11.78 299	12	1.00 25
14" 350mm	31.00 787	1.38 35	25.83 656	18.75 476	21.00 533	13.19 335	12	1.12 28
16" 400mm	36.00 914	1.44 37	25.20 640	21.25 540	23.50 597	15.55 395	16	1.12 28
18" 450mm	40.00 1016	1.56 40	29.13 740	22.75 578	25.00 635	16.34 415	16	1.25 32
20" 500mm	40.00 1016	1.69 43	31.89 810	25.00 635	27.50 699	20.00 508	20	1.25 32
24" 600mm	48.00 1219	1.88 48	Contact DeZURIK	29.50 749	32.00 813	23.15 588	20	1.38 35

Inches  
Millimeters

## Sales and Service

For information about our worldwide locations, approvals, certifications and local representative:

Web Site: [DeZURIK.com](http://DeZURIK.com) E-Mail: [info@DeZURIK.com](mailto:info@DeZURIK.com)



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